



**Florida Department of Transportation
Project Management Office**

PROJECT MANAGEMENT HANDBOOK

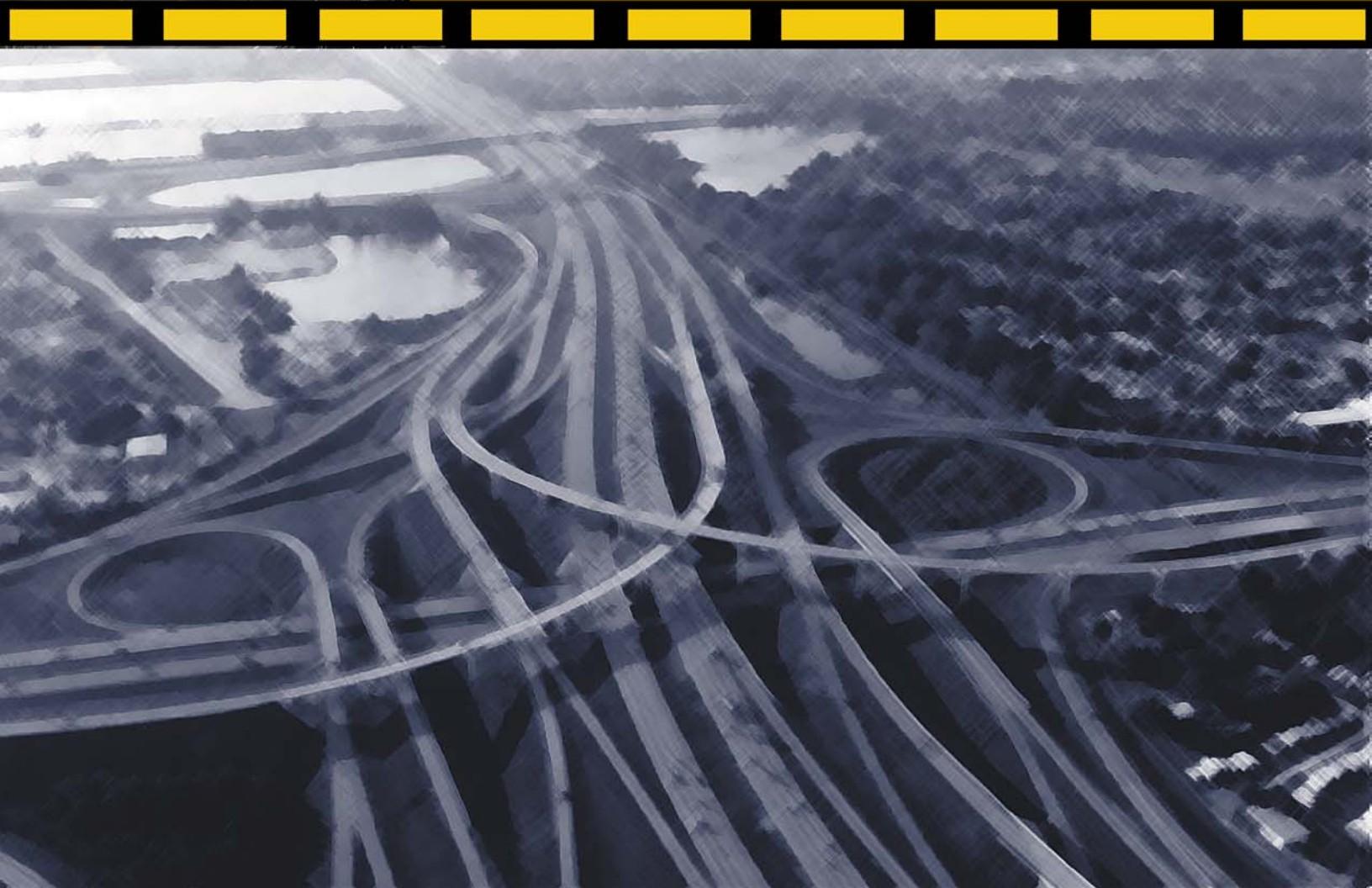




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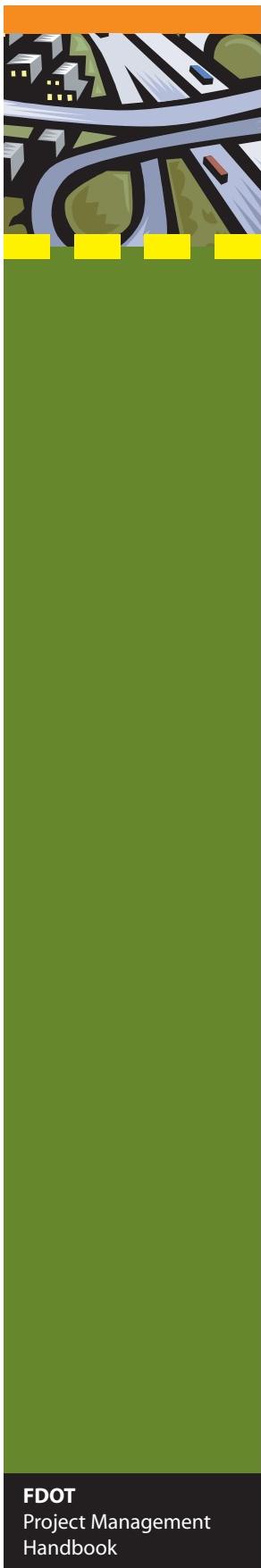
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Introduction

Purpose

The mission of the Florida Department of Transportation (FDOT) is to provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of our environment and communities. This mission is accomplished through the successful execution of a large number of projects annually. Although the Department has available many technical references to aid Project Managers in completing these projects, very few references are found on the *management* of projects. This handbook presents managerial guidelines for both FDOT and consultant Project Managers. This comprehensive resource covers all FDOT project phases, from planning to maintenance. It provides an overview of the Department's project development and implementation process and outlines the steps that should be considered in the execution of an FDOT project.

The target audience for this handbook is technically qualified Project Managers who are not familiar with FDOT procedures and practices. The experienced Project Manager, however, may also find much useful information throughout the text. The handbook is intended for FDOT Project Managers and the consultants and local agency Project Managers who at times act as agents of the FDOT. It is not intended for construction contractor personnel.

This reference is a *handbook* and, as such, it does not establish policies or procedures. It provides useful information that reflects the experience and best practices of Project Managers throughout the state, both FDOT and consultants. It is expected that Project Managers will use this handbook as a reference, selecting useful material and modifying recommended project management practices to reflect the specific requirements of their organization, their own individual management style and the unique needs of specific projects. Many consultant firms have their own Project Management manuals. Consultants will find this handbook useful in managing FDOT projects, but it is not intended to prescribe internal firm operating procedures.

Organization

This handbook is organized into two parts: Part 1, Issues Common to All Project Managers and Part 2, Phase-Specific Project Management Issues.

Because this handbook is a comprehensive collection of information, Project Managers may find some chapters more useful than others. The following chart suggests guidelines for selecting chapters that will be most useful to the phase Project Manager. In this chart, Yes indicates chapters that are directly applicable to a particular project phase.

Background designates those chapters that contain useful background information, even though the content may not be directly applicable to the project phase currently being managed. Descriptions of the project management and development processes for those phases prior and subsequent to the phase being coordinated should provide the Project Manager with a better understanding of the overall process. Cells in the matrix that are blank indicate those chapters that are not relevant to a particular phase.

Recommended Uses of Chapters for Various Phases of Project Management

| Chapter | Planning | PD&E | Design | Right of Way | Construction | Design -Build | Maintenance |
|--|-----------------|-----------------|---------------|---------------------|---------------------|----------------------|--------------------|
| Ch. 1, Elements of Successful Project Management | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Ch. 2, Project Work Plan | Yes | Yes | Yes | Yes | Background | Background | Background |
| Ch. 3, Monitoring and Control | Yes | Yes | Yes | Yes | Background | Background | Background |
| Ch. 4, The Florida DOT | Background | Background | Background | Background | Background | Background | Background |
| Ch. 5, Consultant Firms | Background | Background | Background | Background | Background | Background | Background* |
| Ch. 6, Roles & Responsibilities | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Ch. 7, Transp. Planning | Yes | Background | Background | Background | Background | Background | Background |
| Ch. 8, Work Programs | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Ch. 9, Project Continuity | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Ch. 10, Consultant Procurement | Yes | Yes | Yes | Yes | Yes | Background | Yes * |
| Ch. 11, Contract Negotiations | Yes | Yes | Yes | Yes | Yes | Background | Yes * |
| Ch. 12, Contract Management | Yes | Yes | Yes | Yes | Yes | Background | Yes * |
| Ch. 13, Scheduling | Yes | Yes | Yes | Yes | Yes | Yes | Background |
| Ch. 14, QA/QC | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Ch. 15, Planning PM | Yes | Background | | Background | | | |
| Ch. 16, PD&E PM | Background | Yes | Background | Background | | Background | |
| Ch. 17, DesignPM | | Background | Yes | Background | Background | Yes | Background |
| Ch. 18, Right of Way | | Yes | Yes | Yes | Background | Yes | Background |
| Ch. 19, Construction PM | | | Background | Background | Yes | Yes | Background |
| Ch. 20, Design-Build PM | | Background | | Background | | Yes | Background |
| Ch. 21, Maintenance PM | | | | | Background | Background | Yes |

* Only maintenance Project Managers who are managing professional or contractual services contracts will need these chapters.

INTRODUCTION



Using References

The handbook contains extensive references to FDOT and other documents. Most of them are linked in the text. References are also listed at the end of each chapter, in the order of their appearance in the text. There are three ways to access an Internet reference:

- If you are on line and reading handbook text from a computer screen, the imbedded link will take you directly to the reference.
- If you are reading the handbook in hard copy format but can also access it via the internet, using the list of internet references at the end of the chapter will be most convenient. They are listed in the order that they appear in the text.
- If an electronic version of the text is not available, you may reach the reference via the FDOT or other cited home page. Follow the navigation instruction in the list of references at the end of the chapter.

Updates

This handbook will be updated as required. Updates will be posted on the [Project Management Office](#) website.

Acknowledgments

The FDOT Project Management Office coordinated the development of this handbook. The consultant Project Manager and principal author was Louis B. Stephens, Jr., P.E., of LBS Consulting. The following subconsultants worked on the project:

- TEI Engineers and Planners, assisted in planning, PD&E and design.
- ZHA, Inc., assisted in construction, design-build and maintenance. ZHA also provided graphic design and layout.
- William O. Downs, P.E., also helped with construction and maintenance.
- Rita C. Kutie, PhD, was the technical editor.

The project team received valuable input throughout the development from many FDOT employees. One of the initial tasks involved one-day visits with multiple meetings at each district, the Turnpike, the Central Office and the consultant industry. Over 400 people participated in these meetings and offered needs, recommendations and best practices.

Following the informational meetings, an intensive two-day charrette was conducted with 31 representatives from all districts and functional areas, as well as consultants. This group outlined chapters and offered detailed suggestions on content. Finally, a Central Office committee of 25 senior technical experts, frequently assisted by their district counterparts, reviewed numerous drafts of individual chapters and the full handbook. Some of those who were particularly helpful in the review process were:

- Amir Asgarinik
- Terry Cappellini
- Jim Cunningham
- John Davis

INTRODUCTION



- Molly Eichhoefer
- Bob Krzeminski
- Kathy Kuester
- Dean Perkins
- Louis Reis
- Frank Sullivan
- Lawrence Taylor
- Ken Weldon

Many others also contributed and were very helpful. The result of this wide and active participation is a reflection of the best Project Management practices of the Florida Department of Transportation.

PART 1
Issues Common to All Project Managers

The Project Manager is personally responsible for the project.

FDOT
Project Management Handbook

CHAPTER 1

Elements of Successful Project Management

This chapter presents knowledge and skills required to be a successful Project Manager. New Project Managers should use this information to guide their professional development; experienced Project Managers should use it to strengthen and improve their skills.

Project Management

Definition of a Project. For use in this manual, a **project** is an activity that has clear objectives, a definite schedule or ending date and resources devoted to its completion. By contrast, a **program** is an on-going activity that does not have a defined end. For example, right of way mowing and payroll processing are programs. Projects can be undertaken by consultants and/or contractors or with Department of Transportation resources only.

The projects that are considered the core services of the Department include planning studies, project development and environment (PD&E) studies, roadway and bridge design, traffic studies and design, right of way, construction and maintenance. They are the focus of this manual. These types of projects are the pipelines for the delivery of transportation facilities. There are also other important projects that the Department undertakes such as building construction, landscaping and research. Managers for these projects will find useful information in this chapter and throughout Part 1.

Definition of Project Manager. In this handbook the term **Project Manager** is used to identify the individual responsible for the execution and completion of a project. Consultant firms perform many of the Department's planning, PD&E, design, right of way and construction engineering and inspection projects. Therefore, this handbook will address Project Management from the perspective of both the Florida Department of Transportation (FDOT) Project Manager (PM) and the consultant Project Manager. Throughout this handbook, specific recommendations will be made for either the FDOT Project Manager or the consultant Project Manager. If "FDOT" or "consultant" is not specified, the recommendation applies to both.

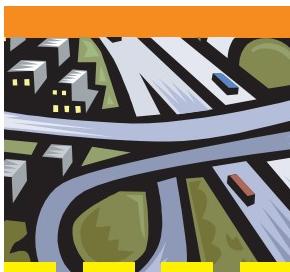
In Florida Statutes, the terms "Contract Manager" and "Department Managers" are used to identify the FDOT Project Managers. Statutory responsibilities for which the FDOT PM is held accountable are summarized below:

- Ensure compliance with all laws, rules, policies and procedures related to the Department's operations.
- Monitor and evaluate whether the Department's goals are being accomplished efficiently and cost-effectively.



Source: FDOT

CHAPTER 1 - Elements of Successful Project Management



PART 1
Issues Common to All
Project Managers



FDOT core services
are delivered
through projects.

FDOT
Project Management
Handbook

- Enforce performance of the contract terms and conditions.
- Serve as a liaison with the consultant or contractor.
- Ensure that contractual services have been rendered in accordance with the contract terms prior to processing the invoice for payment.
- Maintain a contract file and financial information.

Responsibilities of the consultant firm Project Managers are identified in the contract.

Why Is Project Management So Important? Projects are the means by which the Florida Department of Transportation (FDOT) delivers its core services to the traveling public. Successful management of projects is important to the success of the Department. Therefore, Project Managers are key members of the transportation team in Florida. A basic tenet of the Sterling process is the concept of customer service. Customers can be either internal or external. Certainly, the ultimate customer of the FDOT is the public. Since the public is served through the successful execution of projects, in a very real sense Project Managers are also customers for many employees of the FDOT who support Project Managers.

This concept is even more important for consultant firms since all their business is accomplished through projects. The most successful firms understand that Project Managers determine their firms' success. These firms have a corporate culture that honors Project Managers and emphasizes that the efforts of the whole firm—including top management—must be focused on helping them succeed.

What Is a Successful Project? The following criteria define a successful project:

- The project objectives are fulfilled.
- The budget is not exceeded.
- The schedule is met.
- The quality of the product meets or exceeds the standards of the Department and the profession.

Another measure of success for consultant Project Managers is a satisfied client. When the client is satisfied, the firm will be competitive for future work with the FDOT.

Leadership and Management

Successful Project Managers must exercise both leadership and management skills. There is a difference in these terms. Management involves organizing and performing or directing administrative activities; leadership involves motivating others to work toward a common goal.

Management ensures that all the elements of a project plan, as described in the next chapter, are in place. Management skills can be learned. Technical people frequently become very good managers because managing requires a logical way of thinking and is detail oriented. Leadership, on the other hand, is not so easily learned. It is a "people" skill that is sometimes difficult for technical personnel to develop.

Leadership Concepts. Although this handbook is largely devoted to the management of projects, leadership is a very important trait of good Project Managers. The following can be said of good leaders:

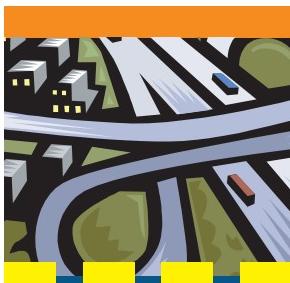
The image shows the cover of the FDOT Project Management Handbook, specifically Part 1. The cover has a blue background with a yellow border at the top. At the top, there is a stylized illustration of a city skyline with buildings and roads. Below the illustration, the word "PART 1" is written in large white letters, followed by "Issues Common to All Project Managers" in smaller white text. In the center, there is a circular icon containing a smartphone with a green screen displaying a person icon. Below the icon, the word "Information" is written in a small font. At the bottom of the cover, the text "FDOT Project Management Handbook" is printed.

- They lead by example. They never ask team members to do something that they are not willing to do themselves.
- They are flexible. They constantly reassess progress on the project and are willing to make changes if necessary.
- They build and maintain relationships.
- They understand that people are motivated differently. They take time to know their people, understand what is important to them and use that information to achieve project goals.
- They recognize the efforts of team members.
- They empower team member to make decisions.
- They take the blame when things do not go well and share the credit when the team is successful.

Major General Perry M. Smith, of the National Defense University, listed 20 fundamentals of leadership in his 1986 book ***Taking Charge, A Practical Guide for Leaders***. These are listed below, paraphrased to better fit the Project Management environment:

1. **Trust is vital.** You must trust the people on your team. In the words of Frank Crane, "You may be deceived if you trust too much, but you will live in torment if you do not trust enough."
2. **A leader must be a good teacher.** The leader must be willing to teach skills, to share insights and experiences, and to work closely with people to help them mature and be creative.
3. **A leader should let subordinates solve most problems.** General George Patton advised: "Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity."
4. **A leader must be a communicator.** Leaders must be good writers, editors, speakers and listeners. A dynamic communicator can motivate people to want to go to work committed to doing an even better job than in the past.
5. **A leader must manage time well and use it effectively.** Leaders must work smarter, not harder. Allow open time every day for thinking and dealing with crises and problems of your team members. Learn to say "no" to time wasters.
6. **Leaders should trust their intuition.** To quote Ralph Waldo Emerson, "The essence of genius is spontaneity and instinct. Trust thyself." Part of intuition is having your "antennae" out and keeping your hand on the pulse of the team.
7. **Leaders must be willing to remove people for cause.** You owe it to the team and to the success of the project to remove those who stand in the way.
8. **Leaders must take care of their people.** Be concerned about your team members' personal and professional objectives and thank them for their efforts.
9. **Leaders must provide vision.** Leaders plan, set goals and provide a vision of the completed project; then they communicate the vision to the team.
10. **Leaders must subordinate their ambitions and egos to the goals of the team that they lead.** The selfless leader gains the respect of subordinates and the support of superiors.

CHAPTER 1 - Elements of Successful Project Management



PART 1
Issues Common to All
Project Managers



Successful Project
Managers accept
ownership of their
projects.

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Handbook

11. **Leaders must know how to run meetings.** Much of a leader's time is spent in meetings. Fight the cultural tendency to hold long, undisciplined meetings with little useful output.
12. **Leaders must understand the decision-making and implementation process.** How are decisions made? What decisions do leaders want made by team members? What decisions should be made by higher authority? Decisions are of little value if they are not implemented, so leaders must have an implementation and follow-up strategy.
13. **Leaders must be visible and approachable.** Leaders should be with their team, not stuck behind a desk all the time. When dealing with a team member, make that person feel that nothing else matters except what is on that person's mind.
14. **Leaders must have a sense of humor.** Leaders should let people know that life is not so important that you can't sit back occasionally and be amused by what's happening. Humor can be a great reliever of tension; a story or joke at a time of crisis or difficulty can be very therapeutic.
15. **Leaders must be decisive, but patiently decisive.** Leaders should listen to all sides before deciding. On occasion they may postpone an important decision until additional information is available. Look for contrasting views. But remember that a non-decision is itself a decision. Risk taking is frequently an essential and healthy aspect of decision-making.
16. **Leaders should be introspective.** Leaders should be able to look at themselves objectively and analyze where they have made mistakes and learn from them.
17. **Leaders should be reliable.** A leader should be careful about what commitments are made; but once commitments are firm, nothing short of major health problems or a very serious crisis should alter them.
18. **Leaders should be open-minded.** The best leaders are the ones whose minds are never closed, who are interested in hearing new points of view and who are eager to deal with new issues.
19. **Leaders should establish and maintain high standards of dignity.** When standards of dignity are established, everyone can take pride in both the accomplishments and the style of the operation. A happy combination of substance and style leads to high performance and morale.
20. **Leaders should exude integrity.** Leaders should not only talk about it, they must operate at a high level of integrity. Of all the qualities a leader must have, integrity is the most important.

Project Managers should work continuously to develop and fine-tune their leadership skills. There are many different approaches to leadership that are effective. The PM must find the style that matches his/her personality. Because leadership involves interrelationships with other people, it is a behavioral attribute. Changing behavior is very difficult. It can be done; but it takes practice as well as reading, training and spending time with a mentor.

Management Concepts. Project Managers must understand the basic concepts of good management. These include:

The image shows the cover of the FDOT Project Management Handbook. The title "PART 1" is prominently displayed at the top, followed by the subtitle "Issues Common to All Project Managers". Below the title, there is a graphic of a smartphone displaying a green icon, with the word "INFORMATION" written below it. The background of the cover is blue.

Leadership can be developed by:

- Practice
- Reading
- Training
- Mentoring

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Handbook

• **Authority.** Authority is the power to act within an organization. Project Managers must clearly understand the limits of their authority. What decisions can they make and what must be deferred to others in higher authority? What actions must be reviewed by others before beginning?

• **Responsibility.** Responsibility is the obligation or moral compulsion to perform assigned duties to the best of one's abilities. Problems will arise when someone has been given the responsibility but not the authority to act. A basic concept of management is that authority must match responsibility.

• **Delegation.** Complex projects cannot be accomplished without effective delegation. Delegation is the sharing of authority to take actions and make decisions. Delegation should be done deliberately, taking into account the abilities of the person to whom

authority and responsibility will be delegated. Clearly outline to her/him the limits of her/his authority, ensure that responsibility and authority are in balance, and explain the reporting and oversight that goes with the delegation. The amount of oversight should vary with the individual. The manager should develop a delegation plan that is unique to the experience and abilities of each individual.

Many people who otherwise have all the traits of a good Project Manager are reluctant to delegate. It is difficult to give up a degree of control. However, good Project Managers can multiply their performance through the effective use of others.

• **Accountability.** Accountability means that one is judged by the manner in which authority is exercised and the way assigned responsibility is carried out. Accountability is accepting the consequences, good or bad, for the outcome of a situation for which you are responsible. Project Managers are accountable for the choices they make and the resulting consequences. This accountability cannot be shared - the Project Manager has the "ultimate responsibility."

However, the Project Manager must hold team members accountable for fulfilling their responsibilities as well. Leadership and management cannot be exercised effectively without holding people accountable for their actions. Project Managers should reward high performance and correct low performance. Although holding team members accountable is sometimes unpleasant, it is necessary. The success of the project may well depend on it.

Team Building. The project team, for purposes of this discussion, is the internal group of people working on a project, either employees of the Department or a consultant firm, or people provided through contract. By definition, the Project Manager has authority over these people. However, project staffing is usually a matrix organization where the project staff is assigned to a Project Manager only for purposes of a particular project. These people may normally report to someone else, and they may be working on other projects at the same time. Further complicating the challenge is the use of contractors and subcontractors to supplement the staff; consequently, various corporate entities may be involved.



CHAPTER 1 - Elements of Successful Project Management

The cover features a stylized illustration of a city skyline with roads and buildings at the top, followed by a dark blue vertical band containing the title and subtitle. Below this is another dark blue band with a circular icon and the text "Building a project team is challenging". At the bottom, a black bar contains the FDOT logo and the book's title.

PART 1
Issues Common to All Project Managers

Building a project team is challenging.

FDOT
Project Management Handbook

The official authority of the Project Manager over his staff may be limited. Thus the challenge is to mold a group of people who may be temporarily assigned from other organizations for the duration of the project and who probably are working only part-time on it, into a team that will produce a successful project. The following are some suggestions that may help:

- **Start Off Right.** Meet with the whole team at the start of the project. Go over all the primary elements of the project plan with them so that they all know the objectives, schedule, budget and operating procedures (see Chapter 2). Ensure that everyone understands his/her role in the project.
- **Clarify Schedule and Budget.** Talk with the supervisors of the team members and clarify all schedule and budget issues. Ideally each group in the team was involved in developing staff hours and negotiating the budget. Regardless, ensure that each group knows the staff-hour budget for its share of the work. To avoid unpleasant surprises at the end of the job, make each group responsible for its own portion of the budget. The PM should not keep all of the budget data confidential.
- **Communicate.** Keep team members informed as the project progresses. Good communication is particularly important for subconsultants who may not be currently involved in the project. They will need to know what to expect when they do become involved. Hold regular team meetings.
- **Know Your Team.** Recognize the strengths and weaknesses of the team members and have a plan to compensate for their weaknesses and to use their strengths.
- **Lead.** Exercise the fundamentals of leadership discussed earlier in this chapter.

Partnering. Partnering is externally focused. The objective is to have organizations not directly under the control of the FDOT work toward common goals. Partnering involves bringing people from interested organizations together to agree on common objectives related to a project and to agree on how to resolve disputes should they occur. Formal partnering agreements are widely used by the FDOT in construction when several organizations with a stake in a project may have differing objectives and expectations.

Although it may not be practical to formalize a partnering agreement to the extent done in construction, the concept may have applicability on any FDOT project. There are a large number of state, local and federal agencies, environmental organizations, homeowners groups, utilities, developers and private companies who have legitimate stakes in the outcome of projects such as PD&E studies and roadway designs.

Informal partnering is frequently used by the FDOT in planning to help ensure general agreement in later phases of project development and implementation. Formal partnering is used regularly in FDOT's Efficient Transportation Decision Making process, which closely links planning and environmental management in Florida.

Although partnering can be a very useful technique to help the PM achieve project goals, partnering agreements do not take precedence over procedures, policies, rules and laws. The Project Management Office of the Central Office has developed a [Partnering Facilitators Manual](#), which may be useful in explaining the basics of partnering and some techniques to use in developing a formal partnering agreement.

Time Management. Time is the one resource that will always be in short supply for Project Managers. There are a number of very good time-management references and

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Good time management is doing the right thing at the right time.

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training opportunities, and Project Managers should take advantage of them. Some fundamental time-management concepts are listed below:

- Understand that time cannot be managed you can only manage how you use time.
- Delegate effectively.
- Stay focused on the project goals and objectives.
- Know how to prioritize. Many time-consuming activities contribute nothing to project success yet extend schedule and deplete the budget. Refuse to do them, delegate them or spend as little time as possible on them. Remember what is important, and use your time accordingly. Importance and urgency are not the same thing.
- Plan. Set aside time each day to plan future activities. Prepare and follow a daily action plan, with priorities.
- Be realistic in your planning. Allow time for the unforeseen.
- Snap decisions are not necessarily good time management. On important issues use available time to identify and analyze alternatives and reach deliberate and sound decisions.
- Know what is important to your boss because in the final analysis, that will determine your priorities.

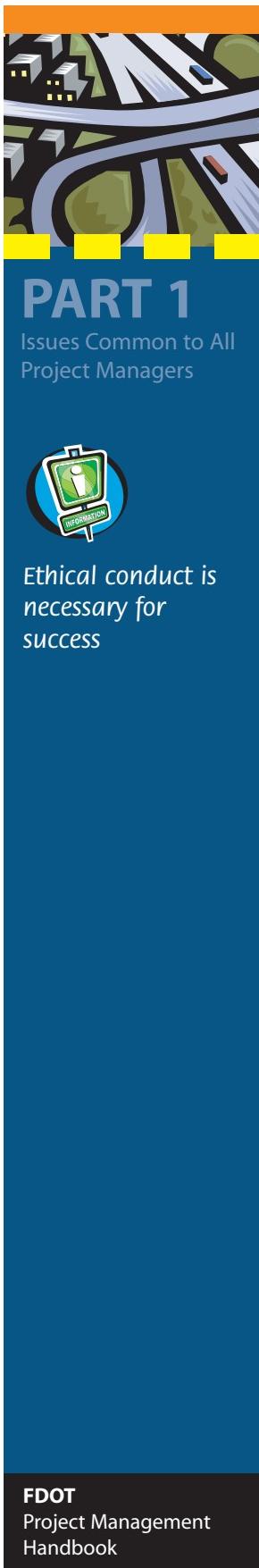
Murphy's Law: "If anything can go wrong, it will!"

Ethics. The success of FDOT projects depends upon the ethical conduct of Project Managers. There are several resources that can provide guidance for both FDOT and consultant Project Managers. These include:

- [Title X, Chapter 112](#), Part III Florida Statutes (F.S.), dealing with standards of conduct for agency employees.
- Title XXVI, [Chapter 334.193-195](#), F.S. dealing with employee financial interests and conflicts of interest.
- [The Governor's Code of Ethics](#)
- [Procedure No. 001-010-020, Ethics Policy](#).
- [Procedure No. 001-450-001, Fraud Policy](#).
- [Laws and Rules](#) pertaining to the Florida Professional Engineers.
- American Society of Civil Engineers (ASCE) [Standards of Professional Conduct](#).
- National Society of Professional Engineers (NSPE) resources and references on [ethics](#).
- Florida Institute of Consulting Engineers (FICE) [Procedures for Handling of Professional Misconduct](#).

Florida's state constitution was revised in 1968 to require a code of ethics, prohibiting conflict between public duty and private interests, for all state employees be prescribed by law. The "Code of Ethics for Public Officers and Employees" is found in [Chapter 112](#),

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[Florida Statutes.](#) Foremost among the goals of the Code is to promote the public interest and maintain the respect of the people for their government. Department employees must also abide by requirements of Sections 334.193 and 334.195, F.S., which are more restrictive than Chapter 112, F.S.

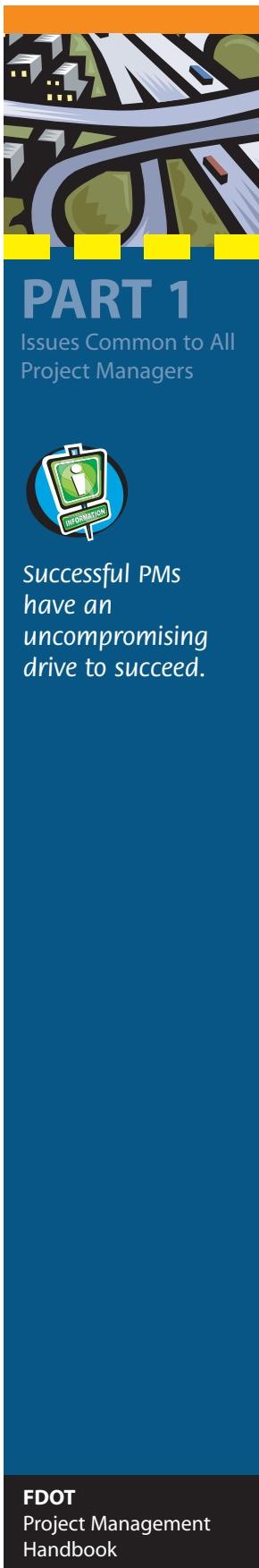
The ethics laws generally consist of two types of provisions—those prohibiting certain actions or conduct and those requiring that certain disclosures be made to the public. The following summaries of these laws are provided to inform Project Managers of the requirements.

- **Solicitation and Acceptance of Gifts.** Public officers, employees, local government attorneys, and candidates are prohibited from soliciting or accepting anything of value, such as a gift, loan, reward, promise of future employment, favor, or service, that is based on an understanding that their vote, official action, or judgment would be influenced by such gift. [Subsection 112.313(2), F.S.]
- **Unauthorized Compensation.** Public officers or employees, local government attorneys, and their spouses and minor children are prohibited from accepting any compensation, payment, or thing of value when they know, or with the exercise of reasonable care should know, that it is given to influence a vote or other official action. [Subsection 112.313(4), F.S.]
- **Misuse of Public Position.** Public officers and employees, and local government attorneys are prohibited from corruptly using or attempting to use their official positions to obtain a special privilege for themselves or others. [Subsection 112.313(6), F.S.]
- **Disclosure or Use of Certain Information.** Public officers and employees, and local government attorneys are prohibited from disclosing or using information not available to the public and obtained by reason of their public positions for the personal benefit of themselves or others. [Subsection 112.313(8), F.S.]
- **Financial Interests.** State officers, employees and agents (including consultants) of the Department and entities in which they have a financial interest are prohibited from having a personal interest in bidding on or contracting for the purchase or furnishing of materials to be used in state work, and from having a personal interest in a contract for the construction of any state road, the sale of any property to or from the Department, or the performance of any other Department work. [Subsection 334.193, F.S.]
- **Soliciting and Accepting Funds.** State officers and employees of the Department are prohibited from directly or indirectly soliciting or accepting any funds (the Department interprets "funds" to include anything of value, excepting marketing items provided to all attendees at a conference) from any person or entity who is engaged in or seeking business with the Department. This prohibition does not apply to solicitation of funds for charitable organizations. [Subsection 334.195, F.S.]

Some simple, common sense guidelines include:

- Consultants must understand the restrictions on the acceptance of gifts by state employees and not place an FDOT employee in an embarrassing situation. Even the most innocent, small gift must be refused by FDOT employees.

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Successful PMs
have an
uncompromising
drive to succeed.

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- FDOT employees must refuse gifts from anyone who does business with FDOT or seeks to do business with FDOT.
- Consultants representing the FDOT in the fulfillment of a contract should follow the same standards of conduct that apply to state employees.
- Perception of a conflict of interest is as important as the reality. Both FDOT and consultant PMs must not place themselves in a situation that could give a false impression to others.
- Both the FDOT and the consultant Project Managers must be very careful to follow all procurement rules fairly and fully during the selection process.
- FDOT employees should honor the confidentiality of firm information identified as proprietary that is collected during the selection and negotiations process. The district general counsel's office should be consulted if there is a public records request for such information.
- Consultants must treat their subconsultants fairly and fulfill commitments made.
- The FDOT Project Manager and the consultant Project Manager must keep business and personal relationships separate.
- The FDOT Office of Inspector General (OIG) has a fraud and ethical conduct presentation that is appropriate for both FDOT employees and industry partners. The OIG is available to present this material to interested groups. This presentation may be particularly appropriate at preconstruction conferences for major construction projects.

The ASCE Standards of Professional Conduct suggest the following guidelines (PLUS) when dealing with ethical questions:

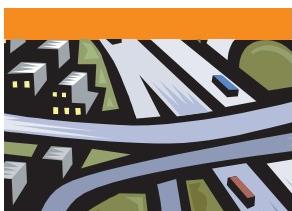
- | | |
|-------------------|--|
| Policies. | Is it consistent with your employer's policies, procedures and guidelines? |
| Legal. | Is it acceptable under applicable laws and rules? |
| Universal. | Does it conform to universal principles and values? |
| Self. | Does it satisfy your own personal definition of right, good and fair? |

A Drive to Succeed. The one common characteristic of all very successful FDOT and consultant Project Managers is an uncompromising drive to succeed. They understand what will make their projects successful, and they work tirelessly to that aim. They accept personal ownership of their projects. The nature of public works is that one's efforts will be scrutinized and criticized by a great many people. The best Project Managers accept valid criticism and suggestions and do not let disagreements become personal. They stay focused on the goals of the project and do not allow themselves to get sidetracked on unimportant issues.

Communication

Effective communication skills may be one of the most important traits of successful Project Managers. Communication is a two-way exchange of information. Information must be clearly and concisely given, and it must be clearly understood by the receiving party. Project Managers must communicate with their counterparts, with their team

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 Effective communication is the basis of team building.

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members and with organizations and individuals external to the project team. Communication processes include person-to-person and telephone conversations, meetings, e-mail, letters and reports. Listening is a critical and often-ignored communication skill.

Levels of Communication. Many FDOT projects have two Project Managers—one from the FDOT and one from a consultant firm. Both have important roles and responsibilities (see Chapter 6). It is critical that these two individuals communicate effectively and often. Good communication is a shared responsibility. At the beginning of a project there should be a clear understanding of the preferred methods of communicating and the frequency. Primary (normally the Project Managers) and alternate points of contact for both sides should be identified. It is probably a good idea to "over-communicate" at the beginning of a project until the FDOT and the consultant Project Managers have developed an understanding of each other and mutual trust. Each must keep the other informed of key issues. The consultant must let the FDOT Project Manager know about the current status of the project, current and anticipated problems, and anything that may affect the project scope, budget and schedule. Budget issues include the projected construction costs for design projects as well as the cost of the project itself. The FDOT PM should inform the consultant PM of anything that may affect the schedule or scope of the project and her/his concerns about project performance. The best way to foster communications with one's counterpart is to develop a professional relationship built on mutual trust and respect for each other's responsibilities and capabilities.

Effective communication is the basis of team building. The Project Manager must work to keep his/her team informed of the important aspects of the project. Good communication with the team will surface issues before they become problems. Team communications include meetings, memos, copies of reports and other deliverables, and lots of face-to-face interaction.

Communicating with external agencies and organizations must follow established protocol. The FDOT Project Manager must understand the district policies related to communication with local agencies, other state agencies and other organizations. The PM must be aware of political sensitivities that may exist. Certainly, external communication should be more formal than internal communication. It is very important that the FDOT PM and consultant PM establish the rules that apply to external communication. Unless specifically agreed otherwise, the FDOT PM should be responsible for all formal communication with external agencies.

The FDOT PM and the consultant PM should be the conduit for the flow of project-related communication between their organizations. However, there are times when technical issues can be resolved more effectively by direct communication among team members. Although the PM may not have to be directly involved in this communication, he/she must be kept abreast of the issues and receive copies of key correspondence. The Project Manager is personally responsible for the success of the project; therefore, delegation of communication responsibilities should be done carefully, with appropriate oversight and control.

Personal Communication. Of the various methods of communicating, face-to-face conversation is usually the most effective. In addition to the verbal message, nuances and other non-verbal messages are exchanged. It is also easier for the sender to get confirmation that the correct message has been received and to clarify misunderstandings in person.

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Plan and manage
meetings well.

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Telephone Communication. Even though the telephone is a commonly used communication tool, much thought should be put into making effective telephone calls. Some useful tips are:

- Have a plan for what you want to say before making the call.
- Speak slowly and clearly.
- Pay complete attention to the call—don't work on your computer or do other things that will distract your attention.
- Try standing during a call; you will speak more clearly and emphatically.
- If you initiate the call, be sensitive to the fact that you may have interrupted something important at the other end.
- Schedule the call ahead of time, if possible.
- Do not waste the receiver's time with idle chatter. Make your points, listen to the other person and get off the phone.
- Plan your message in case you get a voice mailbox instead of the person you called. Voice mail can be a real time-saver, but the lack of two-way communication, even with traded messages, cuts effectiveness dramatically. Request verbal or e-mail confirmation to ensure receipt of your message.
- It is very important to speak clearly and slowly when recording a voice-mail message. Nothing is more irritating than a voice-mail message from someone who rushes through her/his name and phone number in an uninterpretable manner. Repeat this information at a deliberately slow speed.
- When you are out of the office for a day or more, change your voice mail message to let callers know when you will be back and an alternate number for immediate attention.

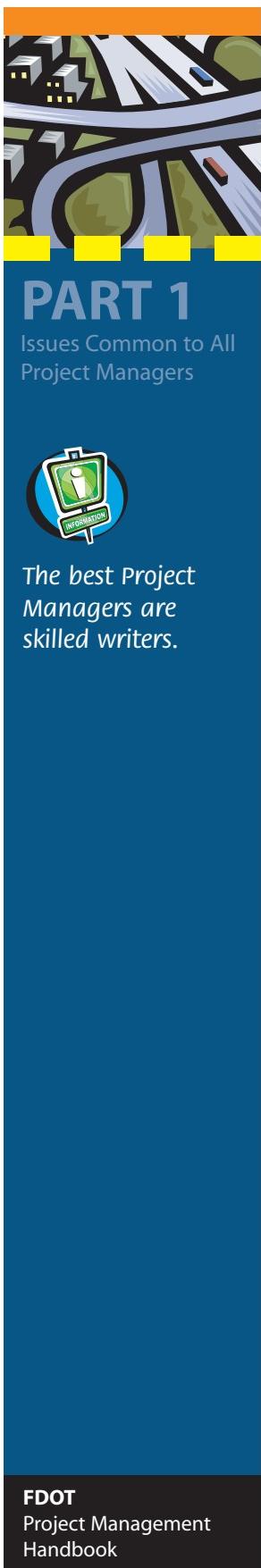
Meetings. Meetings are held for the purpose of communicating. A meeting can be a very efficient method of communication since a number of people are involved.

PMs typically must attend meetings called and controlled by someone else. Prepare for such meetings beforehand and actively participate. Use the time well by learning as much as possible, contributing to the achievement of the meeting objectives and sharing knowledge and concerns.

The PM is also in a position to call and control his/her own meetings. First, avoid the impulse to call a meeting. When a meeting is proposed always ask "Is this meeting necessary?" Impromptu meetings often accomplish very little. There are different purposes for meetings. Some meetings are purely informative, some are problem solving; others are to coordinate or arrive at a decision. Know the purpose of the meeting and tailor the meeting approach accordingly.



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The best Project
Managers are
skilled writers.

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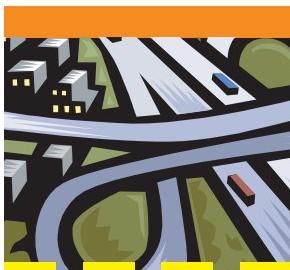
Group communication skills are important for the manager of a meeting. Actively judge both the verbal and non-verbal reactions of participants during the meeting. Be sensitive to both positive and negative reactions. Do not allow personal antagonism or hostility to sidetrack the meeting. Control the meeting with tact and diplomacy. Remember that everyone is very sensitive to the leader, so avoid sending verbal and non-verbal messages that can be misinterpreted. In all cases, the leader must not lose her/his temper.

The following suggestions will help Project Managers lead effective meetings:

- Meetings should have specific objectives, a published agenda, and a set time limit. Distribute this information to participants prior to the meeting so that they can come prepared.
- Tailor the invited participants to the objective of the meeting. Do not waste people's time if their attendance is not necessary.
- There should be a moderator (usually the Project Manager) responsible for maintaining focus on the objectives, staying on the agenda, ensuring that everyone participates and keeping to the time schedule.
- The meeting should start on time, even though some participants are late.
- When the objectives are met, the meeting should end. There is nothing wrong with ending early. When the scheduled time limit is reached, the meeting should end even though the agenda is not completed. Once participants learn that time limits will be enforced, they will start coming on time and limiting discussions to what is important.
- The moderator should not allow one individual to dominate the discussion. It is equally important to draw out quiet or reserved participants.
- Someone other than the moderator should have the responsibility to take minutes. It is a good idea to allow the moderator to review a draft of the minutes before final publication and distribution to all participants.

Written Communication. The best Project Managers are skilled writers. Most of what they do must eventually be communicated in writing. E-mail, letters and reports are all very important to good project management. A good writer will make these documents meaningful, concise and clear so they will have impact. The following tips may be helpful:

- Sometimes letters should be very formal, such as letters of transmittal. Keep these short and to the point.
- When appropriate, make letters personal in tone. Keep the message focused on your objective, make your case, summarize and clearly state your conclusion or recommendation.
- If the purpose of your letter is to get a decision, make that very obvious.
- Avoid writing letters more than two pages in length. The recipient will lose interest and, as a result, your letter will be ineffective.
- Memoranda are usually more informal than letters and are intended for internal use.
- Although it may be therapeutic to write a letter or memo when you are angry, it is not a good idea to send it until you have had time to reflect on the situation. Correspondence written in a negative frame of mind is often regretted later.



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*It has been said
that 85% of a PM's
time is spent
communicating.*

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- All project correspondence is a public record so do not put anything in writing that you would not want to see in the local newspaper.
- E-mail is perhaps the most frequently used method for communicating about routine day-to-day business. It may be misused, however, because of its simplicity and convenience. It is no more appropriate to use poor grammar, misspellings, slang and non-standard acronyms and abbreviations in e-mail than it is to use them in other forms of written communication.
- Remember that e-mail is an official communication and a public record; so do not send inappropriate or non-business-related messages. E-mail is not private.
- E-mail is part of the official record of a project. Information that you would not wish to defend in court should not be put in writing, e-mail or otherwise.
- Generally, the same considerations that apply to any written communication should also apply to e-mail.
- Project Managers should avoid using memos or group e-mails as their primary means of communicating with team members. Although these are necessary sometimes, face-to-face meetings are much better.
- Reports should be carefully planned and follow a logical outline. Every conclusion and recommendation should be supported by the report content.
- Lengthy reports should include an executive summary and a table of contents.

Poor sentence structure, poor grammar, misspellings and inconsistencies in style are examples of sloppy writing. Such errors send a very negative message about the quality of one's work. Ways to improve writing skills include attending a business-writing seminar and seeking assistance with editing work.



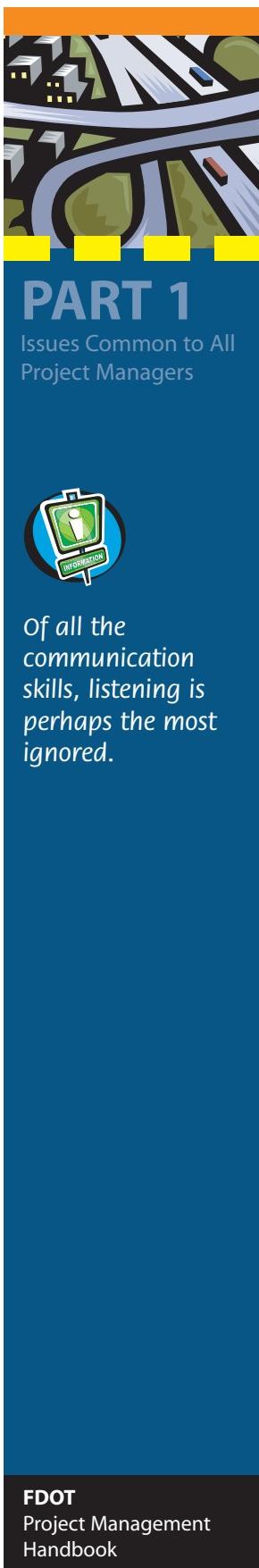
By making something absolutely clear,
someone will get confused.



Requests for Public Records. As an agency of the State of Florida, the FDOT must make public records available to any person requesting to view them. Section 4 of **Procedure No. 050-020-025, *Records Management and Distribution***, explains how such requests are to be handled. The following records are exempt from this procedure:

- Financial statements from contractors received in response to invitations to bid or requests for proposals
- Social Security Numbers
- Personal information of Motor Carrier Compliance law enforcement officers
- Information about family members of specified officials
- Information concerning ongoing legal proceedings may be exempt. The district counsel should be consulted before fulfilling such requests.

Procedure No. 050-020-026, *Procedure No. 050-020-026, Distribution of Exempt Public Documents Concerning Department Structures and Security Systems Plans*, also exempts records related to structural plans of Florida's infrastructure from requests for public records. The procedure recognizes that many non-FDOT employees such as consultants, local governments and utilities need access to these records. Records custodians must



use discretion in these cases and maintain a record of the individuals who received copies of such information.

Detailed information on public records can be found in Appendix A of this handbook.

Listening. Of all of the communications skills, listening is perhaps the most ignored. Whatever the situation, the good listener forces himself/herself to concentrate. If you are framing your response while the other person is speaking, then you are not listening effectively. Try to understand the speaker's feelings and the content of her/his message. Test listening skills by paraphrasing the speaker's main points before making a response. Doing so does not necessarily imply agreement with the speaker, but it will demonstrate that the listener is paying attention. And it may clear up misunderstandings. Be perceptive enough to note what is not being said, such as evasion of relevant points, the truth, or some fact that the speaker wishes to avoid. Most managers need a great deal of practice and self-awareness before they can be truly effective listeners. Effective listening calls for a sharp change in the usual pace of conversation and requires both self-discipline and humility because the focus is on others rather than oneself.

Media Relations. District policies vary, so Project Managers must know the local policies concerning dealing with the media. The district Public Information Officer (PIO) should be informed about any requests from the media, and the PM should coordinate any media communications with that office. On projects that are likely to have media attention, the FDOT PM should meet with the PIO at the outset to understand clearly how this issue should be handled. It is likely that the PIO will be involved throughout the life of a project. Consultant PMs should not respond to any media requests before clearing them with their FDOT Project Managers. When the media interviews a Project Manager, the PM should use it as an opportunity to inform the public about the project and to support the Florida Department of Transportation's goals. Following are some guidelines for dealing with the media:

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**The Six Phases
of a Project**

1. Wild Enthusiasm
2. Disillusionment
3. Hopeless Despair
4. Search for the Guilty
5. Punishment of the Innocent
6. Praise and Honor for the Uninvolved.

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When Talking to the Media:

- Find out what the media really wants to know.
- Understand the ground rules before beginning.
- There is no such thing as "off the record." Expect to be quoted.
- Have an agenda and stay on message.
- Don't view the press as the enemy.
- Be sensitive to press deadlines.
- Try to establish a personal relationship.
- Media personnel are not technically qualified in your business. If asked a poor question, suggest a better one.
- Do not lie. It's O.K. to say, "I don't know."
- Don't get caught up in your own brilliance.
- Don't try to "snow" them with technical jargon. Put technical issues in everyday terms. Do not use acronyms.
- Expect to have your answers misconstrued.
- Ask to review the manuscript or view the video before it goes to final. If something is wrong ask to have it corrected.
- Remember you are representing the FDOT before the agency's customers - the public. Be respectful and avoid coming across as arrogant.

Involvement of the General Public and Transportation Partners. Involvement of the general public and transportation partners is an important aspect of all FDOT activities, as expressed in [**Procedure No. 000-525-050, Policy on Public Involvement Opportunities**](#) and [**Procedure No. 000-650-015, Community Impact Assessment**](#). Keeping transportation partners and the general public informed and involved is a continuing challenge. One of the most common fatal flaws with delayed or abandoned projects is the lack of understanding and support by the public and other groups and agencies. Partner and public involvement is part of every step in the development of transportation improvements. Project Managers must understand the importance of including others in the process and support the Department's public involvement programs. The emphasis of these efforts is slightly different at each phase of a project:

- **Planning.** In the planning stages of a project, the emphasis is on determining what the public wants and needs and then building a consensus among transportation partners to meet the needs. Project Managers must work closely with local planning organizations and local agencies in this process. The challenge in planning is to interest the others in a process that involves a very long-term view.



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Public involvement must be a part of every step in the development of a project.

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- **PD&E.** PD&E projects have perhaps the most intensive public involvement. They typically have a specific public involvement plan. The objective is to include the public and representative organizations in addressing very basic questions: Should this improvement be built at all? If so, what is the best alternative? PD&E public involvement is usually very effective in allowing people who are directly affected by the project to be heard. Usually the challenge is to get those who may benefit from the project but will not be directly impacted to participate.
- **Design.** Districts have public involvement processes that frequently require specific Community Awareness Plans for specific design projects. The emphasis in design is to inform the public of the project and to solicit timely input into design details. This process usually involves close coordination with local governments.
- **Right of Way.** By their very nature, right of way projects always involve dealing with the public. Understanding the needs of property owners, residents and businesses impacted is critical to the success of right of way projects.
- **Construction.** Public involvement issues during construction include traffic interference, business access, noise control and duration of the work.

Whenever dealing with the public, the Project Manager must be respectful, professional, patient and willing to take the time to explain technical issues. Keep an open mind. The public frequently identifies issues and makes excellent suggestions that may be of significant help to the project. Do not argue or get defensive.

Context Sensitive Solutions

Context Sensitive Solutions (and Context Sensitive Design) is a process designed to make transportation professionals more sensitive to the impact of transportation facilities on the environment and communities. Sometimes referred to as "Thinking Beyond the Pavement," Context Sensitive Solutions (CSS) reflects an understanding that a host of important and often competing values or interests must be considered in defining transportation problems and arriving at their solutions. Among them are safety, mobility, and the preservation of scenic, aesthetic, cultural, historic, environmental and other community values. The CSS process involves collaboration of technical professionals, local community interest groups, landowners, facility owners, the general public and other stakeholders who will use, live or work near the transportation facility. Through this process, transportation professionals gain an understanding of community values and strive to incorporate or address them in the development of a project. Fundamental to CSS is the development of a number of alternatives and selection of the best "context sensitive" solution to meet the needs of the project and of the community.

Most importantly, CSS recognizes that defining problems and arriving at solutions involve a wide range of both technical and non-technical stakeholders. Each contributes information and requires information to establish understanding and to arrive at a consensus solution. The reader is referred to [NCHRP Report 480, A Guide to Best Practices for Achieving Context-Sensitive Solutions](#) and the FHWA national website for [Context Sensitive Design](#). FHWA's publication, [Flexibility in Highway Design](#), is a useful document that can be downloaded from the FHWA website.



CSS is an important process that begins early and continues throughout the planning, development and construction phases of every transportation project. It may extend even beyond project completion to maintain commitments to communities.

Experience and Training

A great deal of knowledge and skill must be developed and maintained by Project Managers. Required skills can be grouped in three broad categories:

1. "Soft" skills, dealing with such topics as leadership, communication and ethics. Many of the topics discussed in this chapter deal with soft skills.
2. "Hard" skills, including planning, scheduling and quality control. The remainder of Part 1 of this handbook is largely devoted to hard skills. Other hard skills are implied, but not specifically covered in this handbook. For instance, Project Managers must have computer skills to be effective in today's environment.
3. Phase-specific skills. This material is in Part 2 of this handbook, which details how to manage specific project phases, such as design or construction.

Each Project Manager should develop a personalized professional development program in cooperation with his or her supervisor. It can consist of self-study, Department training courses, professional society seminars and university-level courses. He/She should aggressively seek training and other opportunities for professional development. Perhaps the most effective way to gain knowledge and skills is through experience. This handbook can be a guide, and its users should not be afraid to ask questions.

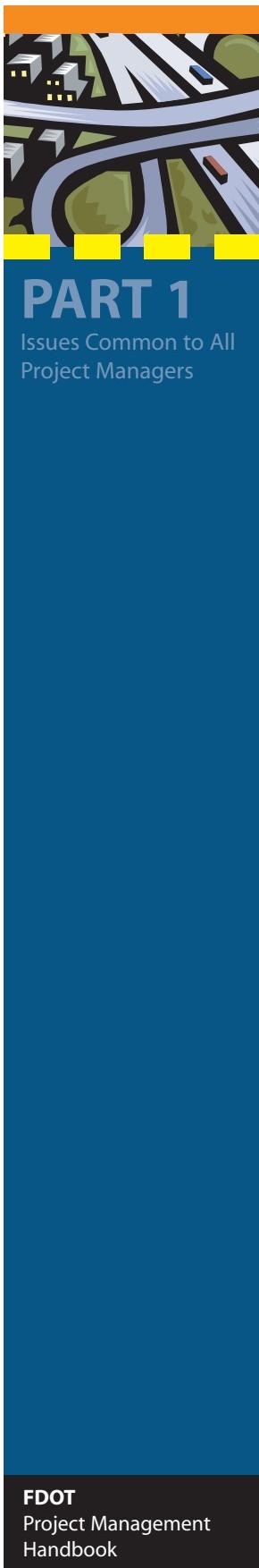
Project Managers will want to learn who the key individuals are in all the support offices of a district. The information in Chapter 4 of this handbook can help in this regard. Usually there are key staff-level people who will have more time to spend sharing knowledge than the office head. Spending some time with these people and learning from them will enhance professional growth. The PM can also develop her/his own network of help and information. Because there is constant turnover in any organization, experienced Project Managers as well as new PMs must work at developing and maintaining their networks. Consultant PMs should develop similar networks of people within their firms, business associates and FDOT. The FDOT and the consultant PM should take advantage of their association and learn from the knowledge and experience of each other.

The best source of knowledge and help for both new FDOT and consultant Project Managers is the experienced PM. Find one and develop an informal mentoring relationship.

Internet References

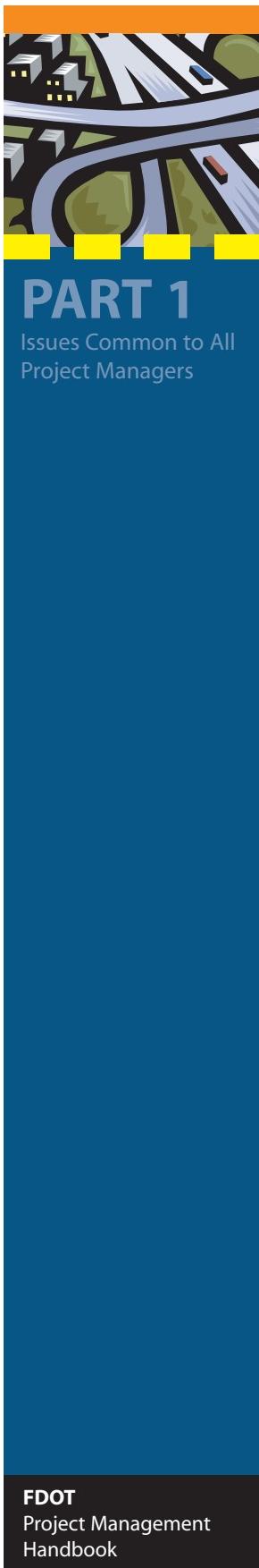
Internet references cited in the chapter are linked directly in the text or can be found below.

- *[Partnering Facilitators Manual](#)*
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Project Management Office*
 4. *Partnering*
 5. *How to Become a Partnering Facilitator*



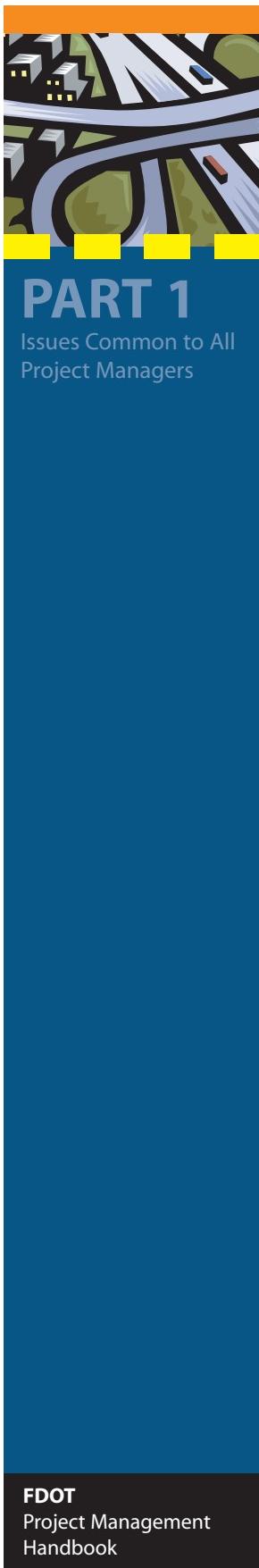
- [Title X, Chapter 112, Part III](#), Florida Statutes
 1. <http://www.flsenate.gov>
 2. *Statutes and Constitution*
 3. *View Statutes*
 4. *Title X*
 5. *Chapter 112*
 6. *Part III*
 7. *112.313*
- Title XXVI, [Chapter 334.193-195](#), Florida Statutes
 1. <http://www.flsenate.gov>
 2. *Statutes and Constitution*
 3. *View Statutes*
 4. *Title XXVI*
 5. *Chapter 334*
 6. *334.193-334.195*
- [The Governor's Code of Ethics](#)
 1. <http://www.myflorida.com>
 2. *Government*
 3. *Executive Branch, Governor's Home Page*
 4. *Policies and Facts in Florida*
 5. *Code of Ethics*
- Procedure No. 001-010-020, [Ethics Policy](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 000*
 6. *Procedure No. 000-010-020*
- Procedure No. 001-450-001, [Fraud Policy](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 000*
 6. *Procedure No. 001-450-001*
- [Laws and Rules](#) pertaining to the Florida Professional Engineers
 1. <http://www.fbpe.org>
 2. *Laws & Rules*
- American Society of Civil Engineers (ASCE) [Standards of Professional Conduct](#)
 1. <http://www.asce.org>
 2. *Professional Issues*
 3. *Ethics*
 4. *ASCE Standards of Professional Conduct for Civil Engineers*

CHAPTER 1 - Elements of Successful Project Management



- National Society of Professional Engineers (NSPE) resources and references on [ethics](#)
 1. <http://www.nspe.org>
 2. *Licensure, Ethics and the Law*
 3. *Ethics*
- Florida Institute of Consulting Engineers (FICE) [Procedures for Handling of Professional Misconduct](#)
 1. <http://www.fleng.org>
 2. *FICE*
 3. *FICE Policies*
 4. *Policy 10.*
- Procedure No. 050-020-025, [Records Management and Distribution](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 000*
 6. *Procedure No. 050-020-025*
- Procedure No. 050-020-026, [Distribution of Exempt Public Documents Concerning Department Structures and Security Systems Plans](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 000*
 6. *Procedure No. 050-020-026*
- [NCHRP Report 480, A Guide to Best Practices for Achieving Context-Sensitive Solutions](#)
 1. <http://gulliver.trb.org/>
 2. *Publications*
 3. *National Cooperative Highway Research Program (NCHRP)*
 4. *NCHRP Project Reports*
 5. *Report 480*
- [Context Sensitive Design - National Website](#)
 1. <http://www.fhwa.dot.gov/>
 2. *FHWA Web Sites*
 3. *Context Sensitive Design - National Web Site*
- *Flexibility in Highway Design*
 1. <http://www.fhwa.dot.gov/>
 2. *FHWA Web Sites*
 3. *Context Sensitive Design - National Web Site*
 4. *Publications*
 5. *Flexibility in Highway Design*

CHAPTER 1 - Elements of Successful Project Management



- Procedure No. 000-525-050, *Policy on Public Involvement Opportunities*
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 000*
 6. *Procedure No. 000-525-050*
- Procedure No. 000-650-015, *Community Impact Assessment*
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 000*
 6. *Procedure No. 000-650-015*

PART 1
Issues Common to All
Project Managers

Remember
the five "P's":

1. Prior
2. Planning
3. Prevents
4. Poor
5. Performance

FDOT
Project Management
Handbook

CHAPTER 2

Project Work Plan

One key to a successful project can be the development of a Project Work Plan. The purpose of the Project Work Plan is to promote the efficient, organized, and timely completion of the work product according to schedule, budget and contract requirements. The Project Work Plan details the job scope, defines the work product and establishes task sequencing, budget, resource allocation, and the schedule.

Who Should Prepare a Project Work Plan?

Project Managers in all project phases will benefit from the development of a Project Work Plan that addresses the criteria for a successful project. Although the following material is oriented primarily toward planning, project development and environment (PD&E) and design projects, the concepts can also be applied to construction and maintenance projects. Some of the elements, however, will not apply directly to these projects and will need to be modified or eliminated.

The Project Work Plan Concept

In general, the Project Work Plan answers these questions: What must be done? Who will do it? How will they do it? How long will it take? How much will it cost? What are the deliverables? How will quality be maintained? What is the schedule?

The Project Work Plan is intended to be an internal tool for both the Florida Department of Transportation (FDOT) and the consultant Project Manager (PM). Each PM should have a plan developed from his/her perspective that addresses the needs of each organization. If a consultant is performing the project, the work plan does not replace the contract and scope of services; it helps the PM prepare these documents and complete their requirements. If the project is being done with in-house forces, the Project Work Plan becomes a "contract" between the Project Manager and others within the Department.

The format and level of detail of a Project Work Plan varies according to the author (FDOT PM or consultant PM) and the type, size and complexity of the project. The suggested elements of a Project Work Plan discussed in this chapter should be modified to fit the project and the needs of the PM. In fact, both the FDOT and consultant firms routinely prepare many of the elements of a Project Work Plan outlined in this chapter. Assembling these elements into one document as a management tool will help ensure that all the essential issues are considered and that the individual elements are planned in a consistent and complementary fashion. However, it is not the intent of the work plan to replace project files, which will contain detailed documentation of most of the items discussed in this chapter. The work plan is intended to be a summary of the most important project records for handy, daily use by the Project Manager.



Source: FDOT

CHAPTER 2 - Project Work Plan



The FDOT PM should develop a Project Work Plan when a project is first assigned, ideally when the project is first scoped. This plan will be very helpful in preparing the scope of services for the contract. The consultant PM should develop a Project Work Plan after selection but before notice to proceed. An initial Project Work Plan will be excellent preparation for contract negotiations for both parties. Once the contract is negotiated, a fairly detailed plan should be in place by notice to proceed on a contract.

The Project Work Plan must be a living document, growing in detail as a project progresses. It is probably best placed in a loose-leaf binder to allow easy revisions and insertion of attachments.

Suggested Outline

The following outline includes all the elements that should be considered for a Project Work Plan. The text that follows explains the type of information that could be included. Many of the individual elements are discussed in more detail in other chapters of this handbook.

Figure 2-1

Project Work Plan Outline

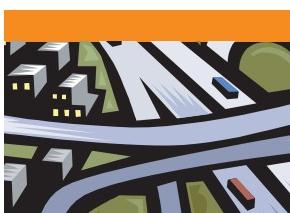
1. Project Definition
 - a. *Title and Identification*
 - b. *Project Description*
 - c. *Project Limits*
 - d. *Objectives*
 - e. *Scope of Services (Attach)*
 - f. *Commitments*
 - g. *Constraints and Assumptions*
 - h. *Expectations*
 - i. *Deliverables*
2. Organization
 - a. *Organization Chart (Attach)*
 - b. *Key Personnel (Attach)*
 - c. *Subconsultants*
 - d. *Staffing (Attach)*
 - e. *Delegation Plan*
3. Schedule
 - a. *Schedule (Attach)*
 - b. *Critical Path Elements*
 - c. *Major Milestones*
4. Financial Issues
 - a. *Contract Values*
 - b. *Method of Compensation*
 - c. *Invoicing*
 - d. *Optional Services*
5. Project Administration
 - a. *Responsible Office*
 - b. *Administrative Staff*
 - c. *Project Files*
 - d. *Special Needs*
 - e. *Communication Plan*
 - f. *Meeting Schedule*
 - g. *Internal Reporting*
 - h. *Progress Reports*
 - i. *Project Closeout Requirements*
6. Quality Control
 - a. *QC Plan (Attach)*
 - b. *Responsibilities*
 - c. *Required Submittals*
7. Risk Assessment
 - a. *High-Risk Elements*
 - b. *Contingency Plan*



1. Project Definition

- a. *Title and Identification* should include project titles and numbers to be used by the Florida DOT. For the consultant Project Work Plan, the firm's project number(s) should also be identified.
- b. *Project Description* should be a brief description of the project that can be used consistently in all project documents.
- c. *Project Limits* should be the same as what appears in the work program.
- d. *Project Objectives* should address what this project is to accomplish and how it relates to the organization's mission and values. Who are the stakeholders and clients?
- e. *Scope of Services* should be referenced and attached to the Project Work Plan. Include with the scope all significant understandings and agreements reached during negotiations.
- f. *Commitments* made in previous phases of work should be listed.
- g. *Constraints and Assumptions* should help establish the "rules of the game." These may include technical issues, project hand-off issues from prior phases of work, public concerns and politically sensitive "hot buttons." List concerned local agencies and other stakeholders. A brief description of the pertinent history may help explain the constraints and assumptions. Other common project constraints include:
 - *Construction access*
 - *Traffic*
 - *Environmental*
 - *Right of way*
 - *Geotechnical*
 - *Utilities*
 - *Other transportation modes (such as airports and railroads)*The earlier constraints are identified, the more flexibility the Project Manager will have in dealing with them.
- h. *Expectations* are those desired outcomes that are not expressed in the scope of services. Examples may include the importance of submittal dates and timely reviews; the interrelationships with the next project in the work program pipeline; and, for a consultant firm, the potential for future business opportunities. The PM should clearly understand the expectations of his/her management.
- i. *Deliverables* should be specifically listed. Frequently not all deliverables are specified in the scope of services, but they are required by reference to an FDOT policy or manual. For example, the **Plans Preparation Manual** contains requirements for deliverables that may not necessarily be repeated in the scope of services. The plan should list everything that must be delivered, including number of copies, printing and other requirements.

CHAPTER 2 - Project Work Plan



PART 1
Issues Common to All
Project Managers



The first step in building a team is knowing what you have to work with.

FDOT
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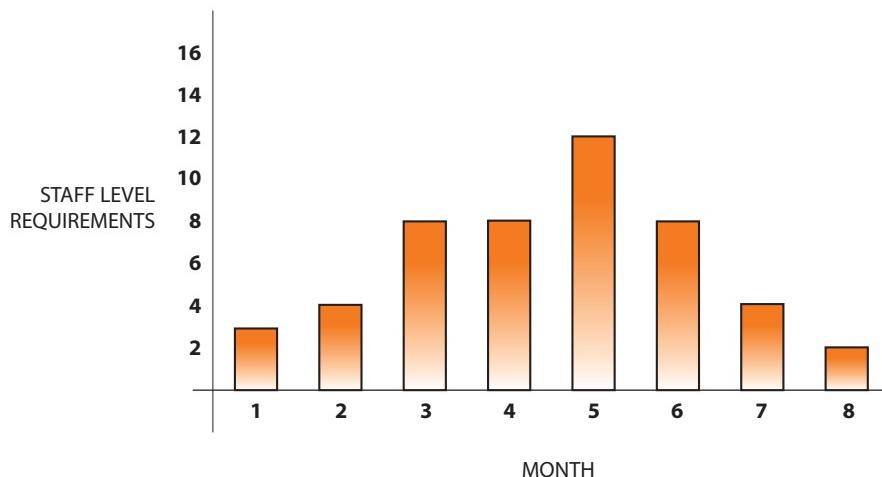
2. Organization

This part of the plan defines the project team members (including representatives of all participating departments, agencies and companies), identifies and quantifies personnel resources, and develops a hierarchy for problem resolution. Team members' qualifications should fit the needs of the project. Who are the members-formal and informal-of the project team?

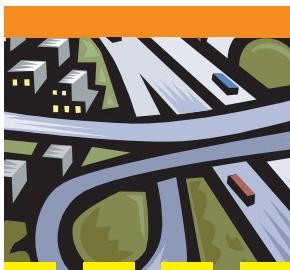
- An *Organization Chart* for both the FDOT and the consultant should be attached. Organization charts should be simple, showing clear lines of responsibility.



- Key personnel* include the Project Manager and her/his supervisor and key assistants for both the FDOT and the consultant. A responsibility and contacts chart should be attached. (A sample form follows the internet references at the end of this chapter.) For design and other engineering projects, the engineer in responsible charge of the work, as defined in Rule 61G15-18.011(1) of the Florida Administrative Code (F.A.C.), should be clearly identified. The Code can be found in the [laws and rules](#) pertaining to Professional Engineers. This identification is not necessary for right of way, planning and other non-engineering projects.
- Subconsultants* should be listed, along with a brief explanation of their role in the project and their key personnel.
- Staffing* may include important individuals by name, or numbers of staff by categories. Staffing needs vary throughout the life of the project, as illustrated below.



CHAPTER 2 - Project Work Plan



PART 1
Issues Common to All
Project Managers



Even the simplest schedule can be one of the Project Manager's most powerful management tools.

FDOT
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Handbook

Applying personnel resources to the schedule allows the PM to plan staff level requirements throughout the life of the project. Personnel experience and expertise should match project complexity. While it is almost inevitable that personnel will change during the course of a job, it is critical that equally qualified or better staff be substituted when changes occur. Possible substitutes should be identified as soon as changes are foreseen. The staffing plan should be attached.

- e. Good Project Managers understand that they cannot do everything on a project. Responsibility must be delegated in a clear, unambiguous manner. A *Delegation Plan* should identify the individuals who will be delegated certain responsibilities and the terms of that delegation, such as levels of authority or phases of a project. Managers of engineering projects should understand the provisions of Rules 61G15-30.002, 005 and 006, F.A.C., which explain the responsibilities of the Engineer of Record and Delegated Engineers, as found in the [laws and rules](#) pertaining to Professional Engineers. If engineers other than the Engineer of Record will be in responsible charge of parts of a project, the Engineer of Record must delegate that responsibility in writing. For example, if a roadway design project includes a bridge and traffic signal design and the Engineer of Record is a roadway engineer, she/he will delegate those portions of the work to qualified structural and traffic engineers who will sign and seal the sheets for which they are responsible. The delegation plan can be used to fulfill these requirements.

3. Schedule

Every project should have a specific schedule. Chapter 13 discusses scheduling in detail. The complexity of a schedule will vary with the complexity and duration of the project. The schedules for small, quick turn-around projects may be as simple as a bar chart showing the duration of each project activity. Large, complex projects require very sophisticated critical path analyses.

- a. The *schedule* should be attached to the Project Work Plan. The schedule is one of the Project Manager's most powerful management tools. The schedule should include all the required production activities and necessary quality control, printing, reviews and revisions that are necessary for a project.
- b. The schedule should be summarized with a list of the *Critical Path Elements*, which help the PM plan for the more important work activities.
- c. Also a list of *Major Milestones* will help the PM and the team to focus on important schedule events.

4. Financial Issues

FDOT PMs and consultant PMs will have different approaches to material in this portion of the Project Work Plan.

- a. *Contract Values* identify the amounts in the contract and include all contracted subtotals and limits.
- b. *Method of Compensation* should also be identified; whether lump sum, cost plus fixed fee, unit price or other. Any effect that the contract values and methods of payment will have on how the project will be managed should be discussed.

CHAPTER 2 - Project Work Plan



PART 1
Issues Common to All Project Managers

 The PM must fully understand the budget and contract pay mechanism.

 The details of project administration must be attended to.

FDOT
Project Management Handbook

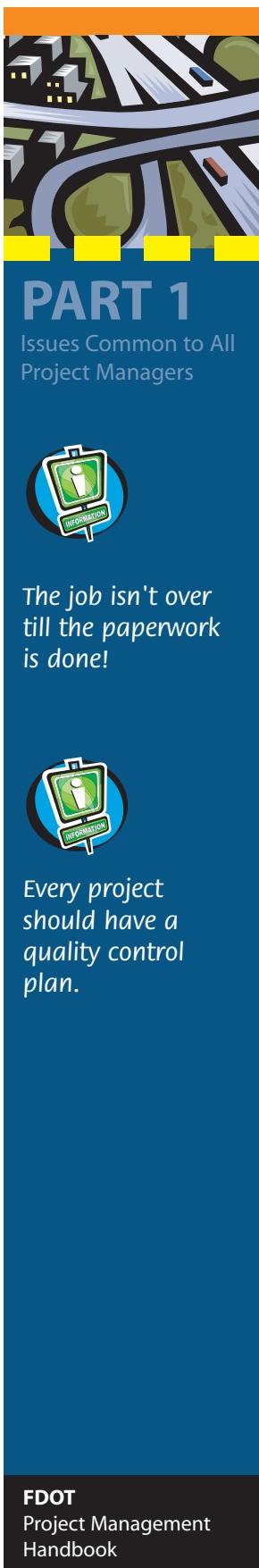
- c. *Invoicing* should include the frequency, dates, task breakouts and invoicing directions for subconsultants. Most consultant projects are invoiced through the Consultant Invoice Transmittal System (CITS). If the project is in CITS, the invoicing directions must be consistent with the manner in which the contract data is loaded into CITS. If the project is not invoiced through CITS, the mechanism for invoicing should be explained.
- d. *Optional Services* should be identified along with trigger dates for timely actions.
- e. For the FDOT PM, any available *Contingency* funds in the budget should be identified. The FDOT PM should discuss any contingency with both the work programs staff and the Professional Services Unit staff to fully understand all restrictions and requirements.
- f. The *Budget* is perhaps the most important financial issue for the consultant PM. Project costs under the control of the consultant PM are labor, direct expenses and subcontracts. These costs must be controlled in order to achieve a profit. Each firm has its own project budgeting procedure that should be followed and included in the Project Work Plan.

5. Project Administration

The Project Work Plan should clearly identify how the project will be administered.

- a. For consultants, the *Responsible Office* should be identified.
- b. Identify the *Administrative Staff* who will handle project actions such as filing, word processing, invoicing and accounting.
- c. *Project Files* should include a list of files to be used and the file numbering and naming system for both hard copies and computer files.
- d. *Special Needs* such as travel procedures, vehicles and special equipment should be included as appropriate.
- e. The *Communication Plan* may be the most important administrative issue. How will the PM communicate with his/her FDOT/consultant counterpart, with the project team, subconsultants and others? The plan should include the use of e-mail, face-to-face meetings, phone calls and written correspondence. Objectives for frequency of consultant/client contacts should be identified. An example may be PM-to-PM phone contact at least weekly and firm principal contacts at least monthly. The plan could also include sample forms for letters, memos, transmittals, fax covers and other forms of written communication. Such samples will help ensure consistency in project titles and numbers and overall appearance of correspondence. A plan for communicating with the media is appropriate for complex or controversial projects.
- f. A *Meeting Schedule* for consultant-client meetings, as well as internal team meetings should be included. Remember to include subconsultants in the meetings plan. Even though there may not be a specific agenda item dealing with a subconsultant, it may be advantageous for him/her to understand important project issues.
- g. Routine *Internal Reports* to both the FDOT and the consultant firm should be listed, as appropriate. Include distribution of internal reports.

CHAPTER 2 - Project Work Plan



- h. *Progress Reports* should be submitted as required by the scope of services. Even if progress reports are not specifically discussed in the contract, they may be a useful communication tool for the consultant and the FDOT PM. Also identify the distribution of progress reports.
- i. Too frequently, the *Project Closeout Requirements* are not completed in a timely manner, and administrative and financial problems result. The requirements of both the consultant and the FDOT PM to close out the project completely should be listed. An index of archived files with specific instructions for retrieval should be included.

6. Quality Control

Quality assurance and quality control are discussed in detail in Chapter 14 of this handbook. Every project should have a Quality Control (QC) plan. Frequently the QC plan must be submitted early in the life of a project. Although this procedure has become somewhat routine on design projects, it is not always formally done on other types of projects such as planning and PD&E.

XYZ Consultants S.R. 2134 Reconstruction

Quality Control Plan

- 1. *Definition of project.*
- 2. *Schedule*
- 3. *Project manager*
- 4. *Quality Control officer*
- 5. *Deliverables*
- 6. *QC Procedures*

- a. The project *QC Plan* should be attached to the Project Work Plan. If a formal QC plan is not required, a simple one can be prepared as part of the Project Work Plan.
- b. Those with specific *Responsibilities* should be listed, including reviewers.
- c. Any *Required Submittals* related to the QC Plan should be listed.

7. Risk Assessment

The hallmarks of a successful project normally are completing the project requirements on time, within budget and with an acceptable quality. The Project Work Plan itemizes the elements of project management that will lead to success. However, with any plan there are risks. Risk assessment involves identifying the definition of success on a project and what may go wrong to jeopardize that success.

- a. *High Risk Elements* may include failure to achieve public consensus, loss of political support, extended review times of submittals, scope creep, a change in counterpart PM, retirement of a key staff member, a delay on a related project, and so forth. In the identification of high-risk elements, focus on those that are important to project success and that may be likely to occur. If any of these

CHAPTER 2 - Project Work Plan



high-risk elements should come about, what will be the severity of the consequences in relation to the project objectives?

- b. A *Contingency Plan* lists the high-risk elements and details how to deal with them. The emphasis should be on how to recover from the event and still achieve project success.

Blank forms that can be used for a simple Project Work Plan and a Key Personnel Contact and Responsibilities Chart follow these internet references.

Internet References

- [Laws and rules](#) pertaining to Florida Professional Engineers.
 1. <http://www.fbpe.org>
 2. *Laws & Rules*

1. PROJECT DEFINITION

- a. Title and Identification
- b. Project Description
- c. Project Limits
- d. Objectives
- e. Scope of Services
- f. Constraints and Assumptions
- g. Expectations
- h. Deliverables

2. ORGANIZATION

- a. Organization Chart
- b. Key Personnel
- c. Subconsultants
- d. Staffing
- e. Delegation Plan

3. SCHEDULE

- a. Schedule
- b. Critical Path Elements
- c. Major Milestones

4. FINANCIAL ISSUES

- a. Contract Values
- b. Method of Compensation

- c. Invoicing
- d. Contract Options
- e. Contingencies
- f. Budget

5. PROJECT ADMINISTRATION

- a. Responsible Office
- b. Administrative Staff
- c. Project Files
- d. Special Needs
- e. Communication Plan
- f. Meeting Schedule
- g. Internal Reports
- h. Progress Reports
- i. Project Closeout Requirements

6. QUALITY CONTROL

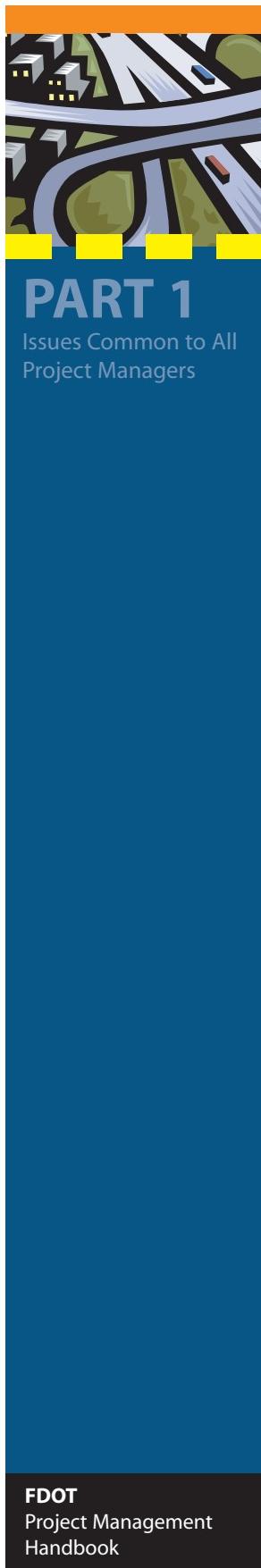
- a. Quality Control Plan
- b. Responsibilities
- c. Required Submittals

7. RISK ASSESSMENT

- a. High-risk Elements
- b. Contingency Plan

Key Personnel Contact and Responsibilities Chart

| Name | Title | Organization | Project Responsibility | Contact Information |
|------|-------|--------------|------------------------|---------------------|
| | | | Address: | |
| | | | Email: | |
| | | | Phone: | |
| | | | Fax: | |
| | | | Address: | |
| | | | Email: | |
| | | | Phone: | |
| | | | Fax: | |
| | | | Address: | |
| | | | Email: | |
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| | | | Fax: | |



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CHAPTER 3

Monitoring and Control

A primary responsibility of a Project Manager is to monitor and control his/her project. The objective is to identify and correct problems before they jeopardize the success of the project. The Project Work Plan, as explained in Chapter 2, provides the benchmarks for monitoring and control. As with the information in Chapter 2, the material in this chapter must be modified to be applicable to construction and maintenance projects.

Although this chapter is intended for the use of both Florida Department of Transportation (FDOT) and consultant Project Managers, FDOT Project Managers must understand that they have special and very important monitoring responsibilities. The proper stewardship of state resources is a fundamental responsibility of Department managers and staff. Resources must be used in a manner consistent with the Department's mission, in compliance with law and regulation, and with a minimum of waste, fraud and mismanagement. Department employees must ensure the resources are used efficiently and effectively to achieve the desired results.

Monitoring

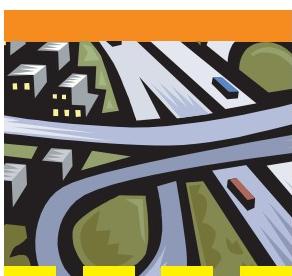
Primary monitoring efforts should be directed to the definition of a successful project: namely, meeting objectives, on budget, on time and of acceptable quality.

- **Objectives.** Are project objectives being monitored on a routine basis throughout the life of a project to ensure that the project stays focused?
- **Budget.** Are the costs of the project under control? For design projects, is the estimated construction cost within that planned?
- **Schedule.** Are milestones being met? Are critical path activities anticipated and managed?
- **Quality.** Is the Quality Assurance/Quality Control plan being followed? Is it working?

Progress Reports. The Florida Department of Transportation (FDOT) and consultant Project Managers have different monitoring responsibilities. A routine (usually monthly) progress report from the consultant should be the primary monitoring tool for the FDOT Project Manager (PM). The progress report should include the following information:

- **Activities during the previous reporting period.**
- **Activities planned in the next reporting period.**
- **Progress.** Compare planned percent complete with actual percent complete.
- **Project Objectives.** Discuss any developments that may impact accomplishment of the project objectives.
- **Scope of Services.** Surface any issues that may affect the scope of services.
- **Budget.** If it is a cost plus fixed fee contract, report actual and planned expenditures. Compare them with the progress report and discuss any obvious discrepancies.

CHAPTER 3 - Monitoring and Control



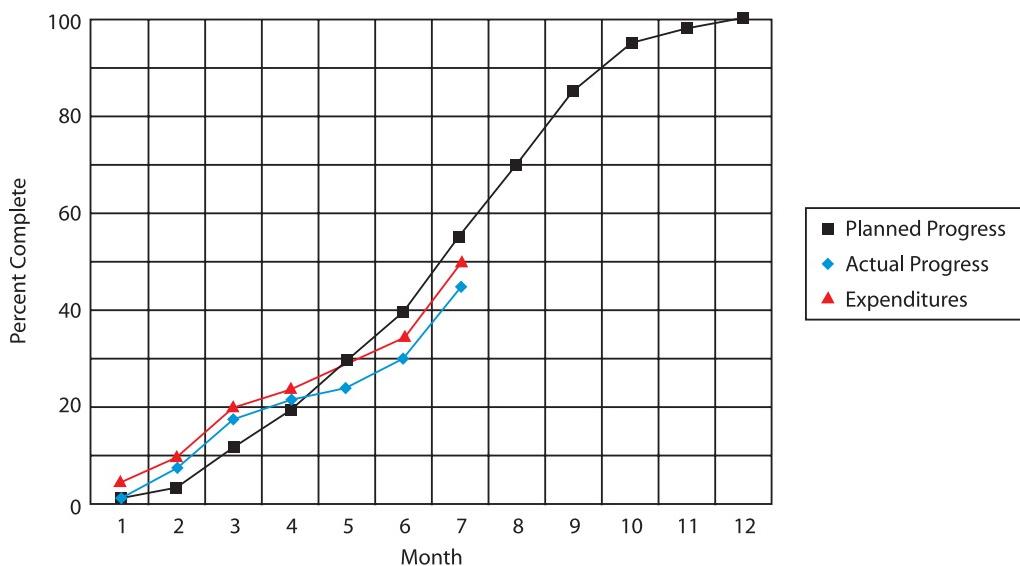
PART 1
Issues Common to All Project Managers



Progress reviews are effective monitoring tools.

FDOT
Project Management Handbook

Figure 3-1 Progress Chart



If it is a lump sum project, it is not necessary to report on expenditures. Address any foreseeable needs for supplemental agreements. If the project is for design, point out any project developments that will significantly affect the construction costs.

- **Schedule.** A milestone list showing the chronology of deliverables and other key events is a simple and helpful way to discuss the schedule. Show detailed milestones for the coming two months but just the major milestones for future periods. Another useful reporting technique is to list upcoming critical path activities as well as their projected durations and start dates. Include any appropriate discussions about preparations, concerns or other issues related to these activities.
- **Quality.** Actions related to the project quality control plan should be reported. They should include submittals currently under quality control review and planned QC activities. This information provides documentation that the QC plan is being followed and that future activities are properly planned.
- **Problems.** Explain any unusual events that have occurred or may occur that could affect the project objectives, budget, schedule or quality. Suggest solutions to resolve problems so their impacts are minimized.

In-Progress Reviews. An effective monitoring tool for the FDOT Project Manager is a visit to the office or work site of the consultant performing the project for an in-progress review. In-progress reviews are not effective if the consultant feels it necessary to put on a good show. The purpose should be to get a feel for progress of the work, to gain a first-hand appreciation for significant issues, to offer input into the job as it is progressing and to foster communications. The FDOT PM should give a relatively short notice of the visit, carefully explain the purpose, and expect to see a "work in progress," not perfection.

Meetings. Review meetings are a more formalized variation of the in-progress review. These meetings may be specified in the scope of services. Review meetings should be well planned and well run, using the suggestions found in Chapter 1. If decisions are needed during a review meeting, the PM must make sure that the requested decision is

CHAPTER 3 - Monitoring and Control



clearly identified. The decision-maker should be presented with alternatives and the consequences of each as well as the PM's recommendation. Good minutes of review meetings are very important. Someone must be assigned responsibility to record and transcribe minutes. A draft of the minutes should be provided to the FDOT PM for comment before they are published.

Project Submittals. The Project Work Plan should include a list of all deliverables. They should also be shown on the milestone list. The consultant Project Manager should ensure that every submittal is made on time, is complete, meets the contract requirements and has undergone the necessary quality control checks before submittal. The FDOT Project Manager should review the submittal to ensure that project requirements are being achieved and that the project is on the right track. It is not necessary to perform a detailed technical check. Chapter 14 contains information on quality control and submittal reviews. The FDOT Project Manager has an obligation to comply with the allotted review time periods, just as the consultant must meet submittal deadlines.

Consultant Issues. The consultant PM must monitor the project on a day-to-day basis. The following recommendations may be of assistance:

- **Time Charges.** The accounting procedures of most firms allow Project Managers to monitor the time charges of the team members. PMs should ensure that the time expended is adequate to accomplish the assigned tasks. Avoid excessive charges because they will adversely affect profitability. Labor costs are the largest project expense under the control of the Project Manager. These costs must be monitored carefully.
- **Team Meetings.** Internal team meetings should be held on a routine basis, using good meeting management techniques. Remember to include subconsultants. Build the agenda around the elements of a successful project: project objectives, schedule, budget and quality.
- **Accounting Reports.** Formal accounting reports vary by firm, but most provide PMs with detailed reports of labor, direct expense, overhead charges and projected profitability. Other important reports may include invoicing and payment data.
- **Project Work Plan.** Review the work plan periodically to evaluate progress. As a project progresses, unforeseen situations and conditions always come up. Update the plan as necessary, and then communicate the revised plan to your team members. If any revision requires a change in the contract or scope of services, take appropriate contractual actions first.

Control

All the monitoring tools discussed above are available so that the Project Manager can detect problems early and take corrective actions before project success is jeopardized. A common mistake is identifying a problem but failing to take effective corrective action in a timely manner.

Problem Indicators. The Project Manager must be alert to signals that there are problems with her/his project. If these indicators are identified and acted on early, they may not jeopardize project success.

- **The Steady Erosion of Actual vs. Planned Progress.** Actual and planned progress will not always match from one reporting period to another. However,

CHAPTER 3 - Monitoring and Control



PART 1
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The last 10% of a project usually takes 20% of the effort.

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Project Management Handbook

when the actual progress consistently falls behind planned, and the difference grows each reporting period, there is a problem. Usually, this problem needs to be addressed in the first third of the project duration. When a discrepancy occurs, there are two choices: revise the schedule and/or develop a plan to catch up. If the original schedule was not realistic or unforeseen events have delayed the project, it may be appropriate to revise the schedule. Be aware that revising the schedule may require a modification to the contract. If a schedule change is made, be sure it is well documented and the necessary people have been informed of the change. If it is necessary to catch up, don't just say, "We will work harder." Determine why progress is falling behind and specifically address the problem.

- **A Mismatch of Actual vs. Planned Expenditures.** If the project is a lump sum contract, a mismatch will be an internal concern to a consultant firm only. If it is a cost-reimbursable contract, the FDOT PM should also be concerned. Red flags should be raised if the mismatch is in either direction. If expenditures are lagging, it may be an indication that resources necessary to do the work properly have not been provided. If expenditures are in excess of the planned rate fairly early in the project, the budget may be in jeopardy.

It is easy to underestimate the work necessary to wrap up a project at its end. Consequently, if expenditures are higher than planned late in a project, there is usually little chance of correcting the situation. Budget problems must be addressed early and aggressively. Labor costs must be controlled. Imposing "loyalty" work time (non-chargeable time during nights and week ends) has only limited benefit. First, it is only useful if the individuals involved are exempt employees. Others must be paid overtime; thus there may be little benefit to the budget. And it will be effective only as an exception. When it becomes the norm, people will burn out and production will decrease. In the worst case, they will leave the organization. It is usually better to evaluate the problem honestly and deal with the source. The problem may be inadequately supervised workers, lack of understanding of the budget, too many personnel changes or a host of other possible issues. Ensure that people are not loading the project with non-productive hours in an effort to maintain chargeability.

- **Submittal Problems.** Unsatisfactory submittals are perhaps the most important indicator of a problem. An unsatisfactory submittal is cause for dramatic action on the part of a Project Manager because it calls the overall project success into question. Project personnel changes may be necessary. The consultant Project Manager must work hard to repair the loss of trust in her/his ability to complete the project. Missed deadlines are another problem indicator, related to the above discussion on progress.

Control Tools. The FDOT Project Manager has several project control tools available. Some of these are:

- Have an informal talk with the consultant Project Manager and voice concerns directly and honestly. Most consultant PMs will appreciate the opportunity to fix the problem before more severe actions are taken. In the majority of cases, this conversation should resolve the problem.
- The FDOT PM should meet with his/her supervisor and inform her/him of the problem. The supervisor may wish to deal with the issue personally.



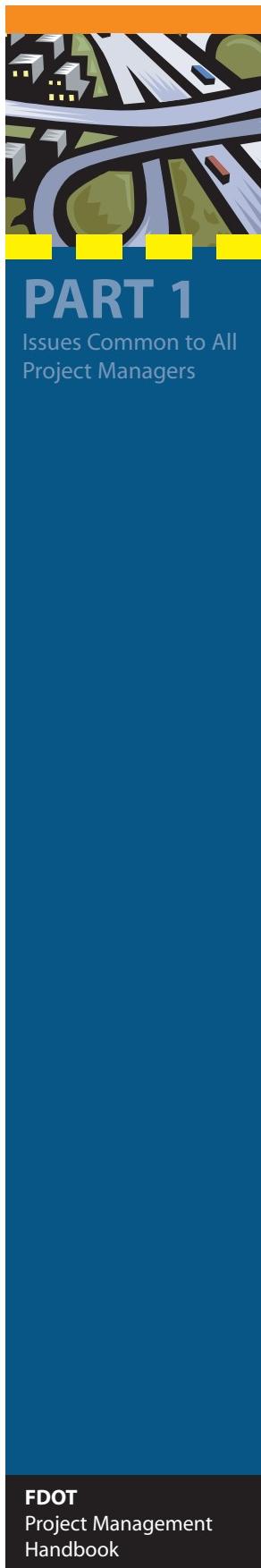
- After giving the consultant appropriate notice, withhold payments on invoices if the work has not been satisfactorily completed. Follow-up correspondence with the consultant is necessary to clearly explain why payment cannot be authorized.
- Submit interim performance grades indicating a problem. Since interim grades can affect selections for other FDOT projects, be completely fair as well as honest in your evaluation. If a poor interim grade is submitted, submit a new one as soon as the performance problem is corrected. FDOT Project Managers can submit interim grades at any time. Performance grading is designed to recognize good performance and to correct sub-par performance. More information on performance grading can be found in Chapter 12.
- Talk to the firm's principal in charge of the consultant Project Manager. This action is going over the head of the consultant Project Manager. Take it only after giving the consultant PM ample opportunity to correct the problem, but to no avail. There are also times when the only solution to a problem is beyond the authority of the consultant PM. In discussions with the PM's principal, be direct about the problem, recommend a solution and explain the consequences to the firm if corrective action is not taken. Be careful not to ask for anything that may be beyond the requirements of the contract and scope of services. Be aware that such a step may result in serious actions against, or even the removal of, the consultant PM. Before taking this action, the FDOT PM should always check with her/his supervisor. It is usually appropriate for more senior FDOT managers to make contact with the firm principal.

When Things Go Wrong

The discussions above deal with ways to monitor and control a project. When a project is going badly, the best rule of thumb is: "Always give bad news early, rather than late." If the project is in danger of not meeting objectives, of being late, or of being over budget, the PM should let management know as soon as all possible efforts to get it back on track have been exhausted. Neither FDOT nor the management of consultant firms likes unpleasant surprises at the end of a project. When bad news is delivered early, management is likely to work with the PM to redefine the project objectives and minimize the consequences of the problem. In any case, major problems will not go away and will not solve themselves. Surface them as early as possible.

When Things Go Right

It is more common for FDOT projects to be successful than otherwise. When things go right, the Project Manager should share the credit by recognizing team members who contributed to the success. In addition to the conventional personnel procedures (performance ratings, letters of commendation, and so forth), look for ways to recognize high performers publicly. Social events, mementos of the project and praise before co-workers are all appropriate. If the consultant performed well, the FDOT PM should recognize that in the performance grades for the project and be willing to make appropriate recommendations to other potential clients of the firm. The consultant PM should remember the contributions of subconsultants. Finally, contributions of stakeholders, either organizations or individuals, should be recognized by the FDOT.



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- 12,000 centerline miles
- 40,000 lane miles
- 6,300 bridges
- 240 million daily vehicle miles traveled

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CHAPTER 4

The Florida Department of Transportation

The Florida Department of Transportation (FDOT) is a large and important agency. Some statistics that attest to that fact include:

- The fiscal year 2003/04 budget was \$6.2 billion.
- There were approximately 8,000 employees in the Department in Fiscal Year 2003/04.
- It is the third largest agency in the State of Florida, representing 9% of the total state budget and 7.5% of the total state employees.
- The Florida Department of Transportation is the fourth largest department of transportation in the country in terms of annual capital outlay.
- Although ten state Departments of Transportation are responsible for more lane miles, the highways of only two carry more traffic measured in daily vehicle miles traveled.

This impressive program is operated in large part by the successful execution of projects; these include studies, designs, construction and maintenance. Project Managers are a key component in maintaining the excellent reputation for service delivery enjoyed by the Department.

OUR MISSION:

The Department will provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of our environment and communities.

OUR VALUES:

Integrity.

We are committed to honesty, loyalty and a high standard of ethical conduct.

Respect.

We value diversity, talent and ideas. We believe every individual should contribute and have the opportunity to be heard.

Excellence.

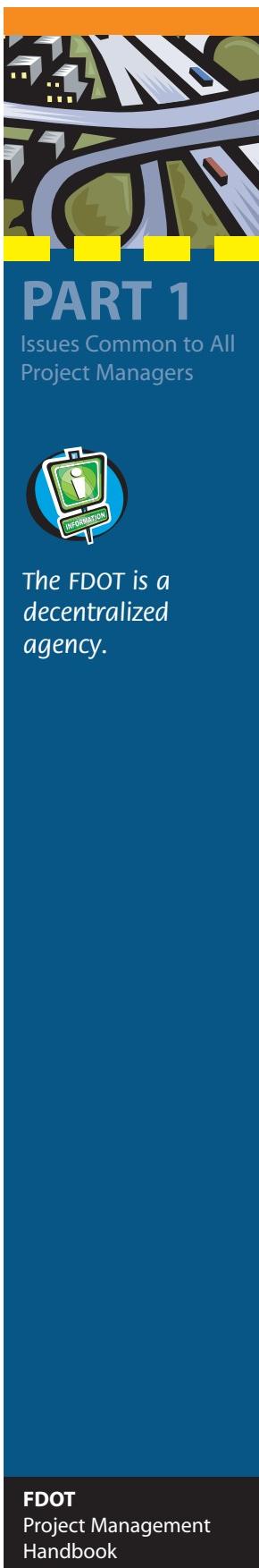
We achieve performance excellence through hard work, innovation, creativity and prudent risk taking.

Teamwork.

We accomplish our goals by working together and relying on each other.

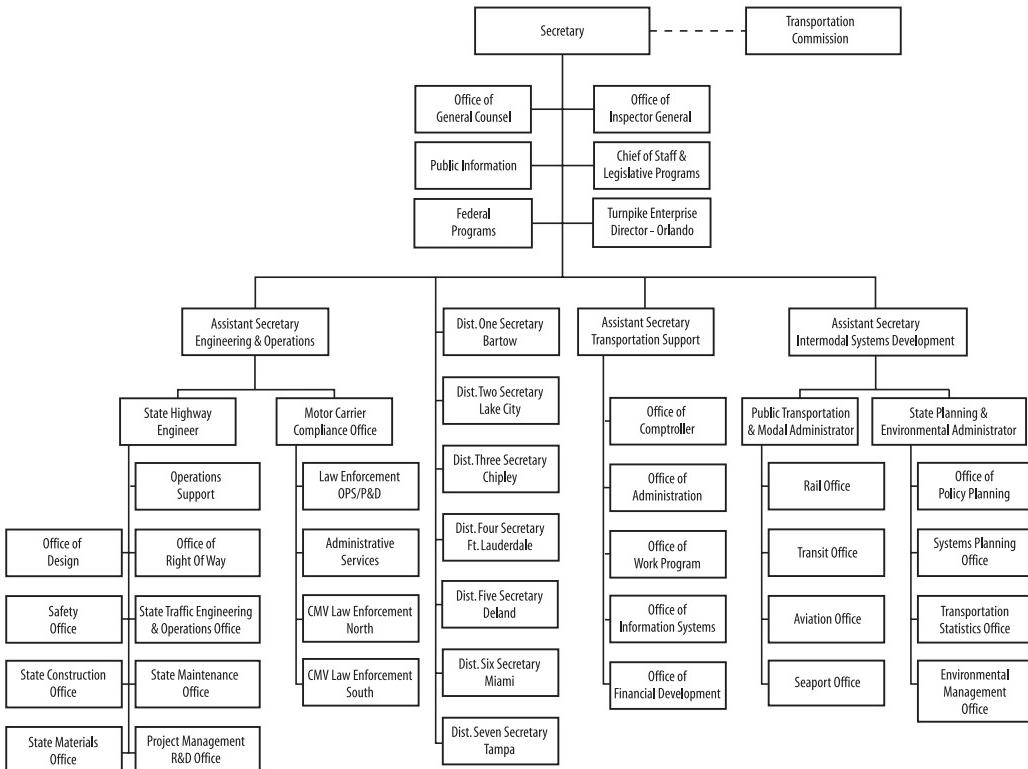
Chapter 7, *Transportation Planning*, explains how the transportation goals are translated into prioritized projects.

CHAPTER 4 - The Florida Department of Transportation



Organization

The Florida DOT organization chart is shown below:



Districts

The FDOT is a decentralized organization, with much of the day-to-day business of the Department conducted by seven districts, managed by District Secretaries. The Turnpike Enterprise operates much as a district, with the unique characteristics of operating toll facilities statewide and generating revenues from the tolls. The major difference is a unique source of funding. The districts are organized somewhat differently, but each has three major areas of responsibility:

1. **Planning:** responsible for transportation planning, public transportation and work program development.
 2. **Production:** responsible for project development, environmental studies, roadway and bridge design, right of way, and surveying and mapping.
 3. **Operations:** responsible for construction, maintenance, traffic operations, materials and safety.

Also important are the many administrative functions that include personnel, human resources, contracting, information systems, facilities management and financial services.

An example District Organization Chart is shown on the following page:

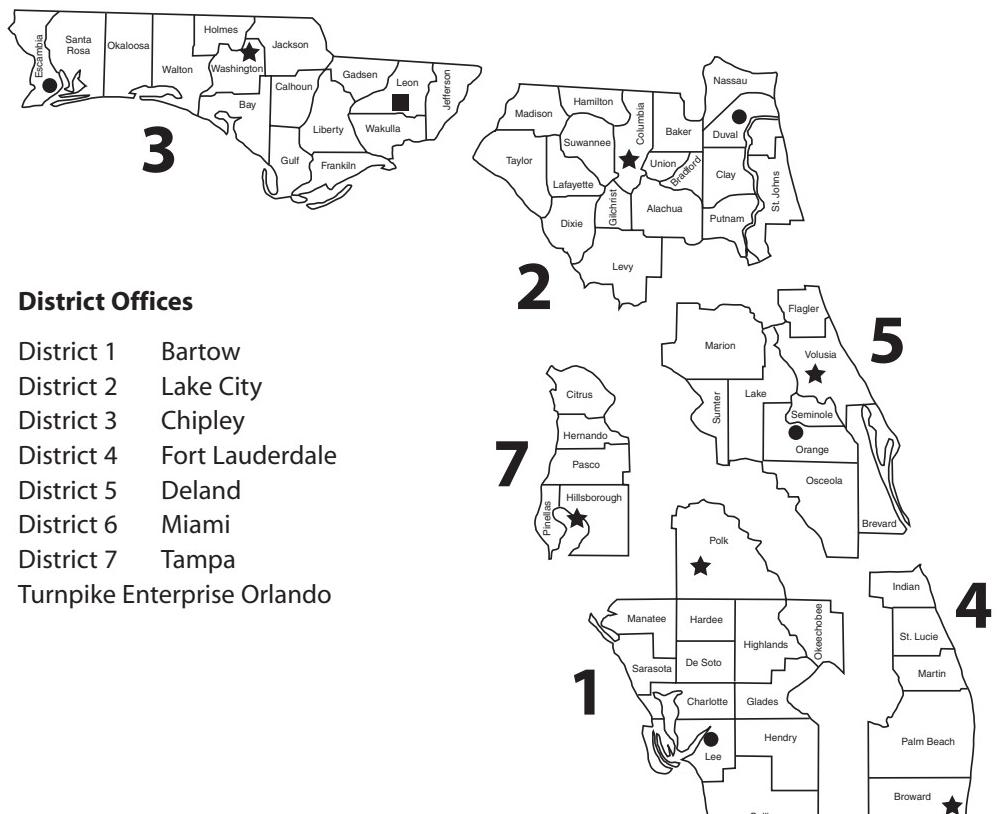


PART 1

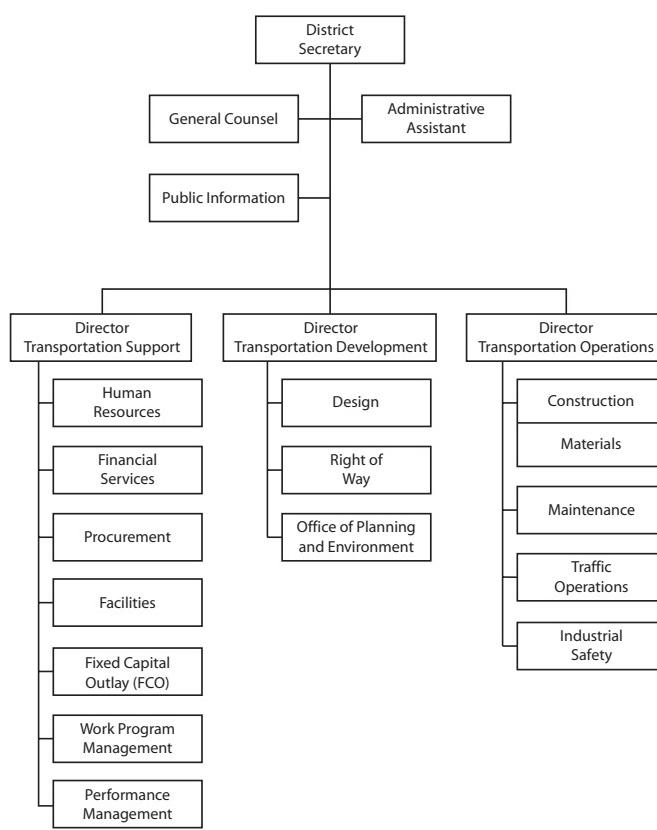
Issues Common to All Project Managers

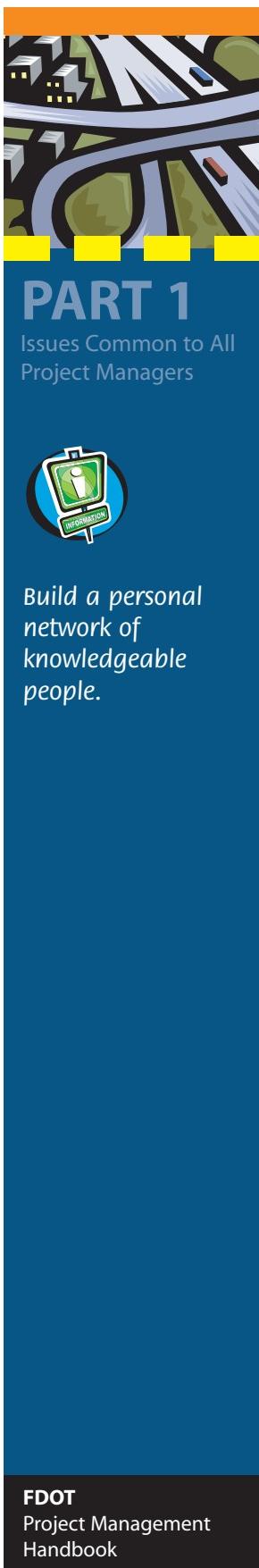


The Central Office establishes policy,
the districts execute the program.



Sample District Organizational Chart





It is important for a new FDOT Project Manager to become very familiar with the district organization. The following suggestions may be helpful.

- Develop a list of personal contacts in each office with whom you will have to coordinate on a day-to-day basis.
- Visit each support office and establish relationships early in your project. Remember that office heads are very busy and will have little time to spare.
- Seek out an experienced staff member who has the time and is willing to answer questions and share his/her knowledge.
- Respect the other individual's time constraints.
- Make appointments with key individuals, and spend some time simply learning what they do, how you can effectively coordinate your project, and what pitfalls to avoid.

State Policy Framework

The state [transportation policy framework](#) consists of laws, policies, procedures, plans and other documents.

- Procedures of the Department are specific operating requirements and instructions that implement policy. The numbering, formatting and approval process of procedures can be found in *Procedure No. 025-020-002, Standard Operating System*.
- All of the [procedures](#) are available on the FDOT website.

Project Managers must comply with all applicable procedures. Many of the more important procedures are referenced in the manual, but Project Managers should review the complete list to ensure that they are aware of all appropriate procedures.

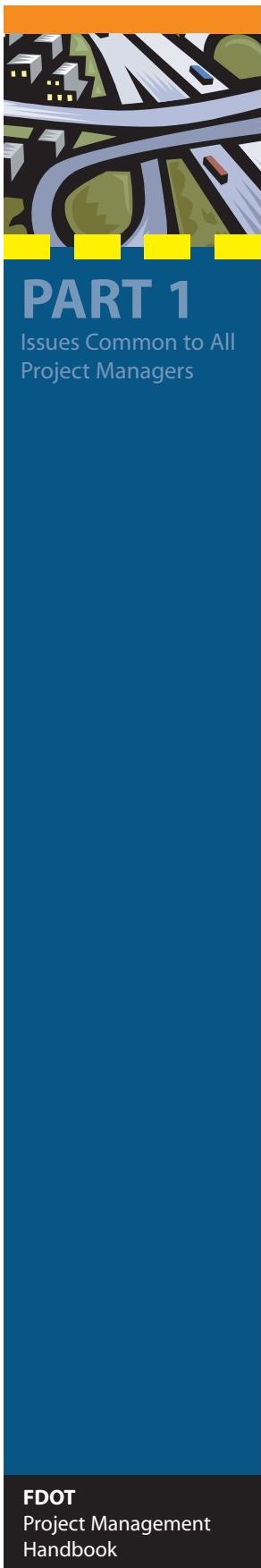
Acronyms

As a governmental agency, the FDOT (and the highway engineering profession) frequently uses acronyms for ease of daily communication. Persons who use them daily tend to forget that they are even using them. People who are not familiar with the FDOT or who are new to highway engineering can find many of these acronyms baffling. Appendix B contains a list of commonly used acronyms.

Internet References

Internet references cited in the chapter are linked directly in the text or can be found below.

- The state [transportation policy framework](#).
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policy Planning*
 4. *Transportation Policy Issues*
 5. *Transportation Policy Framework*



- Procedure No. 025-020-002, [Standard Operating System](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 000*
 6. *Procedure No. 025-020-002*
- FDOT [procedures](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policies, Procedures, Forms and Manuals*



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CHAPTER 5

Consultant Firms

Consultant firms are private businesses that contract with the Florida Department of Transportation (FDOT) to perform desired services. Consultant firms accomplish a large part of the projects in the FDOT work program. Consultants perform planning and project development and environment (PD&E) studies, roadway and bridge design, traffic engineering studies and design, materials testing and inspection, surveying and mapping, right of way services, and construction engineering and inspection services. Consultants are also used by the FDOT in general consultant roles to help manage programs, provide technical direction and review the work of other consultants. The purpose of this chapter is to give FDOT Project Managers a basic understanding of how consultant firms operate. Because most of the consultants doing business with the FDOT are engineering firms, much of the discussion in this chapter will focus on them. However, many consultant firms offer other services used by the FDOT such as planning, surveying and mapping, geotechnical, materials testing, archeological, landscape architecture, and right of way services. This discussion applies to these firms as well.

The Business of Consulting

Much diversity is found among consultant firms doing business with FDOT. Size, services offered, locations, management, organization and corporate cultures can vary considerably. There are, however, some similarities among firms as well. As businesses, all have profit as an objective. All must conform to some basic accounting procedures in order to do business with FDOT. And all must practice in accordance with Florida laws and rules related to the practice of professional engineering or other regulated professions.

Consultant Firm Characteristics

There is no such thing as a "typical" consulting firm. Each is unique, but there are some common characteristics among many firms in terms of organization, staffing and financial operations.

Organization. Typically, the organization of consultant firms is generalized by size. The American Council of Engineering Companies defines firm size by number of employees: small firms, 1- 30 employees; medium firms, 31-150; and large firms, 151 or more employees. The actual number of employees used to categorize a firm is not important, but the size of the firm does account for some organizational differences.

- **Small firms.** Most small firms that practice in Florida are based here and have only one or very few offices. Small firms usually specialize in one or a few technical services. Small firms must have very flexible organizations. Personnel are assigned to projects as needs arise. Individuals may be expected to perform a large number of tasks. It is common for managers and engineers to perform necessary administrative tasks in addition to their technical work.
- **Medium firms.** These firms usually have several offices and groups of technical specialists. Specialized subgroups are likely to exist, such as roadway design, stormwater design, bridge design and traffic engineering. Medium firms are likely to have an accounting group, human resources and other administrative staff.

CHAPTER 5 - Consultant Firms



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Project Managers
are critical to the
success of
consultant firms.

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- **Large firms.** Most large firms operate in several states and have multiple offices. Many have an international practice. Large firms are usually organized either geographically or functionally, and sometimes they are a hybrid of both. Offices are usually grouped into regions. Large firms frequently have very specialized technical groups that provide services throughout the firm and well-defined administrative procedures.

Although medium and large firms have more resources, local offices may be very small and, in fact, may operate in a fashion similar to small firms.

Firms can be sole proprietorships, partnerships or corporations. Some of the larger firms are corporations whose stock is publicly held and traded. In most incorporated firms, however, stock is privately held, commonly by the senior employees of the firm. Employee-owned firms, known as Employee Stock Ownership Plans (ESOPs), are becoming more common. An ESOP has broad employee ownership of company stocks.

The management of a consultant firm is closely related to the ownership and size of the firm. The senior management of sole proprietorships and partnerships usually rests with the owners themselves. Stockholders, as represented by a board of directors, ultimately control corporations. The board of directors elects senior corporate officers. These may include positions such as the president, chief executive officer, chief operating officer and vice presidents. There may be a number of vice presidents in a firm, each with a specific area of responsibility. A vice president is considered an officer of the firm with the power to make contractual commitments. Consultant firm organizations seldom have fixed positions with clearly defined position descriptions. More common is the tailoring of an organization to fit the skills and abilities of key employees.

Staffing Issues. The skills and abilities of employees determine the success of a consultant firm. Therefore, hiring and keeping highly qualified people are always important objectives. Project Managers are critical to the success of a consultant firm. Minimum qualifications of a consultant Project Manager usually include professional registration, technical expertise and experience, project management skills, qualifications that will "sell" to clients, and the ability to market and win projects. The qualified consultant Project Manager must be able to build professional relationships, write letters of interest and proposals, and make good presentations.

Financial Operations. The key to understanding consultant firm financing is to be aware that every cent spent must be accounted for. Labor is by far the largest single expenditure of firms. Labor costs are accounted for by tracking hours charged to either projects or overhead accounts. Direct expenses must also be accounted for in the same way. All charges are either project chargeable or overhead.

Overhead costs can usually be subdivided into three groups, roughly equivalent in size:

1. **Employee benefits.** This group includes pay for vacation, holiday and sick time; firm contributions to retirement plans and social security; insurance costs and all other employee benefits. Since these are usually established by policy, management has very little control over their costs.
2. **Direct expenses.** Direct overhead costs include office rent, computer hardware and software, office supplies, equipment, training and all other direct costs that are not chargeable to projects. Although some control of these costs is possible, the larger direct expenses are usually rent and computer systems. These are major, long-term commitments.

CHAPTER 5 - Consultant Firms



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Overhead is always a major concern of consulting firm managers.

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3. **Labor costs.** This group includes all non-project chargeable labor costs, including firm management, administrative staff, accounting, time for training and marketing. Marketing is usually a large cost. It includes the time required to present the firm to potential clients in the most positive light, to track potential projects, to prepare letters of interest and proposals, and to make presentations. Chargeable time is the overhead component that managers have most control over.

Overhead is calculated by adding all overhead direct expenses and labor costs associated with each of these three groups and dividing by the total project chargeable labor cost. Because project-chargeable costs are the base, the overhead rate is very sensitive to project chargeability of labor. A relatively small increase in non-chargeable time can create a large increase in the overhead rate which, in turn, will have a negative impact on profitability. For this reason, consultants must always be concerned about time chargeability.

FDOT contracts are based on the audited overhead rate, which is a firm's final overhead rate for the past fiscal year. An independent auditor must be used to arrive at the audited overhead rate. The Department has very strict guidelines on the acceptability of overhead charges that can be included in an audited overhead rate.

To make a reasonable profit, it is necessary to balance overhead costs and volume of work. These two factors are interrelated and sometimes competing. A sufficient backlog of work ensures the resources to maintain adequate staffing. Overhead funds must be expended for marketing to obtain a steady flow of new work. The key to profitability for a consultant firm is to strike a balance between the two.

Qualifications to Perform Work for the Florida Department of Transportation

[Rule Chapter 14-75](#), Standard Operating System, Florida Administrative Code, describes the qualification process for consultants, work categories that the FDOT uses for professional consultants and the minimum qualifications required for each. Considerations used in the qualification process are:

1. Professional license or registration.
2. Personnel with appropriate experience and training.
3. Business registration with the Department of State.
4. History of suspension for failure to maintain adequate performance grades with the FDOT.
5. Integrity and responsibility.
6. History of conviction of contract crime.
7. Employment of or providing compensation to any employee or officer of the Department.
8. Attempts to influence the actions or judgment of Department employees.
9. Acceptability of supporting overhead, accounting system and insurance information.

A list of all currently [qualified consultants](#), by work category, can be found at the Procurement Office website.

CHAPTER 5 - Consultant Firms



The image shows the cover of 'PART 1' of the 'Issues Common to All Project Managers' handbook. The cover is blue with yellow borders at the top and bottom. At the top, there's a stylized illustration of a city street with buildings and trees. Below the title 'PART 1' and subtitle 'Issues Common to All Project Managers', there's a circular icon containing a smartphone with a green screen displaying a person icon, with the word 'Information' written below it. The main text 'Learn about firms from:' is followed by a bulleted list: 'FDOT Data', 'FICE', 'Websites', 'Brochures', and 'Newsletters'. At the bottom, it says 'FDOT Project Management Handbook'.

A list of certified Disadvantaged Business Enterprises (DBE), including consultants, is on the same website. The site also contains the forms and application procedures for firms seeking DBE certification. FDOT always gives consideration in the selection of professional consultants to DBE consultants and to consultants who propose to use DBE subconsultants when other factors are equal.

Sources of Information

When selecting a consultant or beginning a project with a consultant, the FDOT Project Manager should learn as much as possible about the firm. With just a little work, a Project Manager can find valuable information about a firm's size, services, headquarters and office locations, principals, organization and corporate culture. The FDOT qualification information discussed above is a good place to start. Another good source is the Florida Institute of Consulting Engineers (FICE) Annual Directory & Guide, which includes a description of services offered by member firms and their office locations, principals and the number of Florida-based employees. Copies of the directory can be obtained directly from FICE. Information concerning [FICE](#) can be found at the website of the organization. Most consultant firms maintain their own websites, which frequently contain a great deal of valuable information. Finally, many firms produce excellent company brochures and newsletters.

Internet References

Internet references cited in the chapter are linked directly in the text or can be found below.

- [Rule 14-75](#), Standard Operating System, Florida Administrative Code
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Procurement Office*
 4. *Professional Services*
 5. *Rule 14-75*
- [Qualified consultants](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Procurement Office*
 4. *Professional Services*
 5. *Prequalified Consultants*
- [Florida Institute of Consulting Engineers](#)
 1. <http://www.fleng.org/>
 2. *Practice Section - FICE*

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Project Managers
have many
important
responsibilities.

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CHAPTER 6

Responsibilities and Roles of Project Managers

Project Managers are personally responsible for the success of their projects. A successful project meets the project objectives, on time, within budget and at an appropriate level of quality. To accomplish the objectives of a successful project, Project Managers must have a clear understanding of their responsibilities and roles.

The proper stewardship of state resources is a fundamental responsibility of Department managers and staff. Resources must be used consistent with the Department's mission and in compliance with laws, rules, regulations and procedures. Waste, fraud, unauthorized use of public funds and mismanagement must be avoided. Department employees must ensure that resources are used efficiently and effectively to achieve the intended results. More information on financial responsibilities will be included in future versions of this handbook.

Areas of Responsibility

The following list describes the responsibilities of all Project Managers.

- **Scope.** The scope defines the project objectives. The Project Manager (PM) must follow the scope carefully to ensure that it is met and that only work defined in the scope is undertaken. Work beyond that authorized in the scope is known as "scope creep," and it is unnecessary and expensive.
- **Contract.** The Project Manager must responsibly manage contracts to ensure that all contract provisions are completed. If there is not a formal contract, such as for in-house projects, there is an implied contract with the management of the Florida Department of Transportation (FDOT). It is the role of the Project Manager to meet the contract objectives.
- **Cost.** Keeping cost within the budget is a primary responsibility of the Project Manager.
- **Time.** Completing the work on time is another major responsibility of the Project Manager.
- **Quality.** The Project Manager must deliver a product of a quality that meets or exceeds the standards of the Department and the profession.
- **Risk.** There is some risk associated with all projects. The Project Manager, whether consultant or FDOT, must be aware of risks and work to reduce or eliminate unacceptable risk to the project. Risk management is an important and often overlooked role of the Project Manager.
- **Communication.** The Project Manager must communicate effectively to be successful. All communications skills are important: writing, speaking, conducting meetings, interpersonal exchanges and listening.
- **Human Resources.** The largest single expense of most projects is usually labor, so the efficient and effective use of staff should be a concern of Project Managers. Project Managers must always be concerned about development of the project staff and delegate effectively so that people can grow professionally. Staff development is a particular concern for consultant PMs. Not all FDOT PMs

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Both the FDOT and consultant PMs have specific roles in the fulfillment of responsibilities.

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have personnel responsibilities; nevertheless, they should be concerned about the development of less experienced people assisting them. The development of consultant personnel is also in the interest of the FDOT and should be encouraged by the FDOT PM.

All these responsibilities are addressed in detail in other chapters of this handbook. This chapter summarizes the respective responsibilities and roles of the FDOT Project Manager and the consultant Project Manager.

These responsibilities apply to all Project Managers, whether they are FDOT or consultant, who are managing any phase of a project—planning, project development and environment (PD&E), design, right of way, construction or maintenance. The Project Manager is at the hub of concern and accountability. Figure 6-1 illustrates this concept:

Figure 6-1

Project Manager Accountability



It is apparent that the roles of Project Managers differ in the various project phases. Specific roles and responsibilities are discussed in detail in Part 2 of this handbook.

Consultant Projects

When a project has both a Department and a consultant Project Manager, it is important that each one's responsibility and role be clearly defined. The FDOT Project Manager is accountable to the management of the Department for the success of the project. He/She must take ownership of the project. The FDOT Project Manager must have a drive to succeed (discussed in Chapter 1) and manage from a "big picture" view of the project. The FDOT PM must understand that the consultant was hired because of expertise and resources available to do the job. The consultant Project Manager must accept professional responsibility for the project and, therefore, should have the authority to match that responsibility.

The consultant Project Manager must fulfill the scope of services and other contract requirements on time, within budget and of an acceptable quality. In addition to contractual responsibilities, the consultant Project Manager has certain business responsibilities to his/her firm related to both profitability and obtaining future work. The consultant Project Manager also has professional obligations and responsibilities that must be fulfilled. She/He should aggressively pursue the project to completion and not wait for specific instructions from the FDOT Project Manager at each step of the way. Both the FDOT and the consultant Project Manager have specific roles to play in the fulfillment of the responsibilities discussed above. Their respective roles are illustrated in Figure 6.2.

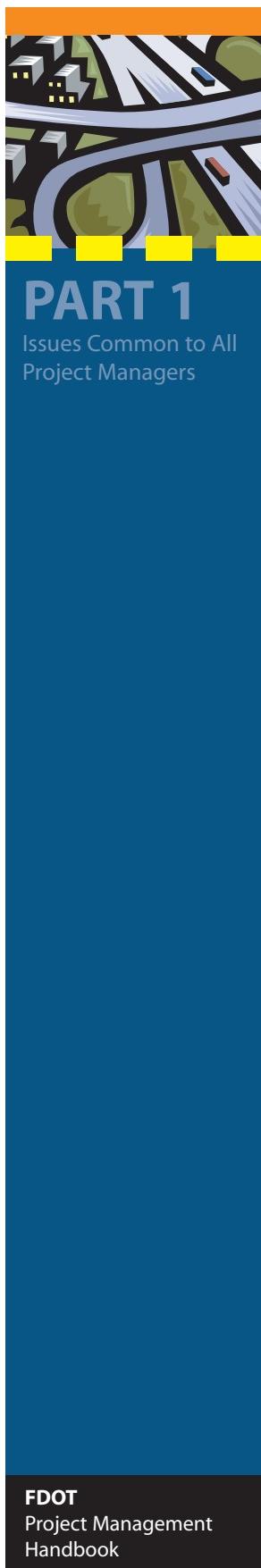
CHAPTER 6 - Responsibilities and Roles of Project Managers



Figure 6-2.
Respective Roles of Project Managers

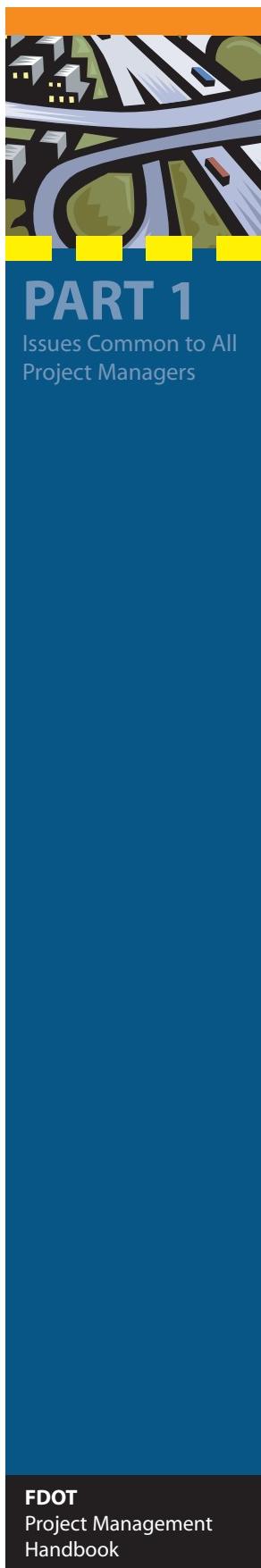
| Responsibility | FDOT PM Must: | Consultant PM Must: |
|----------------|--|--|
| Scope | <p>Develop the scope of services. Coordinate input from support services and others on the project team.</p> <p>Know and understand the scope.</p> <p>Be accountable to management for the success of the project.</p> <p>Approve modifications to the scope and update the document.</p> | <p>Completely understand and fulfill the scope of services.</p> <p>Do not work beyond the scope of services.</p> <p>Be accountable to both FDOT and firm management for the success of the project.</p> |
| Contract | <p>Thoroughly know and understand the contract and fulfill all contractual obligations.</p> <p>Understand fiduciary responsibilities to ensure proper expenditure of public funds and to ensure that contracted services are delivered.</p> <p>Review deliverables, progress reports and other project monitoring mechanisms to identify problems early.</p> <p>Take decisive action if monitoring indicates a problem: work products are deficient, the consultant is non-responsive or the project is significantly behind schedule.</p> | <p>Thoroughly know and understand the contract and fulfill all contractual obligations.</p> <p>Fulfill all contract requirements on time, within budget and of an acceptable quality.</p> <p>Ensure that all progress reports and deliverables are submitted on time.</p> <p>Advise FDOT of contractual problems on a timely basis and propose reasonable solutions.</p> |
| Cost | <p>Stay within the budget; be concerned about total costs, including design, right of way, construction and inspection services.</p> <p>Process appropriate changes in the contract amount.</p> | <p>Complete the project within established budget.</p> <p>Meet the profit objectives for the project set by firm management.</p> |

CHAPTER 6 - Responsibilities and Roles of Project Managers



| Responsibility | FDOT PM Must: | Consultant PM Must: |
|----------------|---|--|
| Time | <p>Approve any change in project schedule.</p> <p>Be concerned with schedule linkages to other projects in the work program.</p> <p>Identify actions required by FDOT management and ensure timely completion.</p> <p>Ensure that Department review commitments, as defined in the contract, are met.</p> | <p>Meet all schedule requirements.</p> <p>Know which activities are on the critical path and manage these activities aggressively.</p> <p>Update schedule as needed.</p> |
| Quality | <p>Assure that a process is in place and functioning that will result in quality products (Quality Assurance).</p> <p>Coordinate reviews by other FDOT reviewers and forward comments, after eliminating those that are redundant and inappropriate and deciding which to give the consultant when comments are in conflict.</p> <p>Be responsive to the needs of the consultant.</p> | <p>Provide the necessary reviews and checks to provide quality products (Quality Control).</p> <p>Comply with all laws and rules related to the practice of professional engineering.</p> <p>Ensure that all submittals are complete and of an acceptable quality.</p> <p>Allow sufficient time and staff hours to perform quality control reviews on all submittals, in accordance with the project QC plan.</p> <p>Be responsible for the completed project.</p> |
| Risk | <p>Be aware of high-risk elements that can jeopardize project success and be prepared to take aggressive action when necessary.</p> <p>Be prepared to deal with external risks, such as changing political support, lack of public consensus and changes in Department priorities.</p> | <p>Be aware of high-risk elements that can jeopardize project success and be prepared to take aggressive action when necessary.</p> <p>Be prepared to deal with internal risks, such as loss of key staff, conflicting project, and underestimated budget.</p> <p>Minimize risk of errors and omissions.</p> |

CHAPTER 6 - Responsibilities and Roles of Project Managers

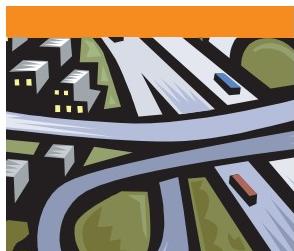


| Responsibility | FDOT PM Must: | Consultant PM Must: |
|-----------------|---|--|
| Communication | <p>Clearly communicate FDOT direction and decisions on all project-related issues to the consultant.</p> <p>Be responsive to the consultant.</p> <p>Keep FDOT management informed.</p> <p>Coordinate the support activities of other offices in the district, such as surveying and mapping, materials and right of way.</p> <p>Coordinate with other Project Managers in the project phase pipeline to ensure project continuity.</p> <p>Provide or coordinate public involvement and media communications.</p> <p>Establish procedures for communicating with local governments, other agencies, the press and others outside the project team.</p> | <p>Take the initiative to ensure communication with the FDOT PM.</p> <p>Be responsive to the FDOT PM.</p> <p>Keep the FDOT PM informed of all significant issues.</p> <p>Keep the project team and subconsultants informed of all significant issues.</p> <p>Keep firm management informed of all significant issues.</p> <p>Communicate with local governments, other agencies, the press and others outside the project team only if authorized by the FDOT PM. If the FDOT PM retains these roles, assist her/him as necessary.</p> |
| Human Resources | <p>Ensure that the necessary Department staff is available to perform or review the project.</p> | <p>Ensure that the necessary human resources are available to perform the project.</p> <p>Ensure that the key staff members work on the project as proposed to the FDOT.</p> <p>Delegate effectively. Coach and train others to become Project Managers.</p> |

Working Together

The FDOT Project Manager and the consultant Project Manager must function as a team. The responsibilities and roles of both Project Managers must be clearly defined and understood in order to promote teamwork. The overall objective of both Project Managers is to manage a successful project, but each must respect his/her counterpart's unique organizational responsibilities.

CHAPTER 6 - Responsibilities and Roles of Project Managers



PART 1
Issues Common to All Project Managers



Work together to build trust and a productive relationship.

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Successful Project Managers adjust their methods of operation and management style to complement the methods and style of their counterpart. The consultant PM must spend the time necessary to ensure that there is a mutually comfortable level of understanding of the technical issues. If the consultant PM is not familiar with FDOT procedures, the FDOT Project Manager must spend more time helping the consultant Project Manager gain knowledge and understanding about the Department. Both Project Managers must work to build trust and foster a productive relationship. [Rule 60L-36.003](#), Florida Administrative Code, contains requirements concerning relations with regulated entities, such as consultants under contract. Specifically covered in this rule are offers of employment, receipt of gifts and financial interests.

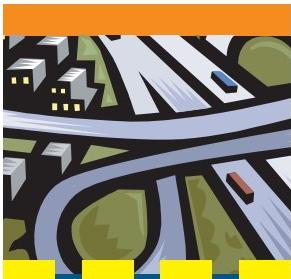
Relationships are frequently determined by personalities. Sometimes personalities clash. Both Project Managers must be willing to work to overcome potential personality clashes. Communication is essential. Each Project Manager must be forthcoming with concerns about his/her counterpart. There are two sides to every issue, and one party is not always right. There needs to be some give-and-take in any relationship. Be willing to compromise on those issues that do not jeopardize the statutory responsibilities of the FDOT PM or the success of the project. It is not necessary to like the other individual, but it is essential to have a productive, working relationship. The success of the project, being paid for with public funds and for public use, is ultimately the most important consideration.

If a productive relationship is not possible, then the consultant Project Manager has a responsibility to recognize the situation and to work with the firm's management and the FDOT to find an acceptable replacement consultant Project Manager. Although this course of action may be painful, in severe cases it may be the only solution that will allow the firm to complete the project without damaging future business relationships. If the consultant does not take the initiative in such a severe case, the FDOT Project Manager should discuss the situation with the district management. If necessary, either the FDOT Project Manager or a more senior FDOT manager should meet with the firm's principal in charge of the project and request that appropriate action be taken.

Internet References

Internet references cited in this chapter are linked directly in the text or can be found below.

- [Rule 60L-36.003](#), Florida Administrative Code
 1. <http://www.dos.state.fl.us>
 2. *FL Administrative Code*
 3. *FAC Online*
 4. *Chapter 60*
 5. *Chapter 60-36.003*



PART 1
Issues Common to All Project Managers



All Project Managers should have a basic understanding of the Transportation Planning process.

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CHAPTER 7

The Transportation Planning Process

It is important for all Project Managers to understand the basic planning process used to identify needs and projects undertaken by the Florida Department of Transportation (FDOT). The planning process frequently involves working with local government officials to balance statewide and local needs. This chapter provides a brief explanation of the transportation planning process used in Florida.

Current trends show that economic activity and transportation demand in Florida will outpace the growth of the state's population over the next 20 years. According to the 2000 update to the 2020 Florida Transportation Plan (FTP), Florida's transportation system annually serves almost 16 million residents and 59 million visitors, as well as vast movements of freight within and across the state's border. By 2020 the system must serve annually a projected population of 21 million residents, 87 million visitors and a significant increase in freight movement. Florida's planning process has been developed to help plan for these needs, now and in the future.

Federal Involvement

The federal government establishes transportation policies and funding levels for all transportation programs that are eligible for federal transportation funds. Federal laws and regulations directly affect transportation decision making. Most federal transportation programs in Florida are administered by the following agencies:

- *Federal Highway Administration (FHWA)*
- *Federal Transit Administration (FTA)*
- *Federal Aviation Administration (FAA)*
- *Federal Railroad Administration (FRA)*

Another federal agency that directly affects transportation decision making is the Environmental Protection Agency (EPA), which carries out most federal responsibilities related to the environment, particularly those related to air and water quality.

Statewide Planning

State Comprehensive Plan. The State Comprehensive Plan sets forth the goals and policies for the entire state. It is Florida's highest level planning document. The plan is published in its entirety in state law.

Florida Department of Community Affairs. The Florida Department of Community Affairs (DCA) works closely with FDOT, local and regional agencies, and the private sector on transportation decisions that affect development, the environment and other issues. The DCA administers the process of determining whether local government comprehensive plans are in compliance with state regulations. Each year the DCA reviews the FDOT Five-Year Work Program and Metropolitan Planning Organization Transportation Improvement Programs to ensure that they are consistent with local government comprehensive plans.

Florida Department of Environmental Protection. The Florida Department of Environmental Protection (DEP) works closely with FDOT and local governments on natural resources, air quality and other environmental issues. The DEP's involvement in the

CHAPTER 7 - The Transportation Planning Process



The cover features a stylized illustration of a city skyline with roads and buildings. The title "PART 1" is prominently displayed in large white letters, with "Issues Common to All Project Managers" in smaller text below it. A circular icon containing a smartphone with a map on its screen is positioned to the left of the text.

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The FTP goals and objectives drive project selection.

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Project Management
Handbook

decision-making process occurs primarily during project development, design and construction activities. Other state agencies and organizations participate in transportation decision making on issues such as economic development and human services.

Florida Department of Transportation. The Florida Department of Transportation, through the seven districts, is responsible for planning, operating and maintaining the State Highway System. FDOT also assists local governments, metropolitan and regional agencies, and the private sector in providing public transit, aviation, rail, seaport and other transportation facilities and services. The Turnpike Enterprise, a unique element of the FDOT, is responsible for planning, operating and maintaining Florida's Turnpike, statewide.

Florida's Transportation Plan

The FTP is the policy framework that guides future projects and resource allocations of the FDOT. The plan presents a mission statement and long range goals to achieve that mission. More detailed objectives support each goal. The FTP is supported by modal plans for aviation, rail, transit and highway (the Florida Intrastate Highway System [FIHS] Plan). The mission of the Florida Department of Transportation is:

"Florida will provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of our environment and communities."

The FTP goals and objectives provide the policy framework for crucial investments in Florida's 21st century transportation system, which must respond to projected growth and development in a manner that fulfills the FDOT mission. These goals are:

- **Safe Transportation:** *Safe transportation for residents, visitors and commerce.* The following objectives support the goal of safe transportation:
 - Reduce motor vehicle, bicycle and pedestrian fatalities.
 - Improve the safety of highway/railroad crossings and other locations where modes intersect.
 - Improve the safety of commercial vehicle operations.
 - Improve safety of seaport, rail and public airport facilities.
 - Improve the safety of services, vehicles and facilities for transit, and for the transportation disadvantaged.
 - Minimize response times of each entity responsible for responding to crashes and other incidents.
 - Implement hurricane response, evacuation and recovery plans in cooperation with emergency management agencies.
- **System Management:** *Preservation and management of Florida's transportation system.* The following objectives support the goal of system management:
 - Adequately maintain all elements of the transportation system to protect the public's investment for the future.
 - Increase the efficiency of the transportation system using appropriate technologies.
 - Reduce the number of commercial vehicles that illegally exceed weight limits on Florida's public roads and bridges.
 - Manage access on Florida's public roads to preserve capacity and enhance safety and mobility.

CHAPTER 7 - The Transportation Planning Process

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The FTP Short Range Component established three "strategic goals."

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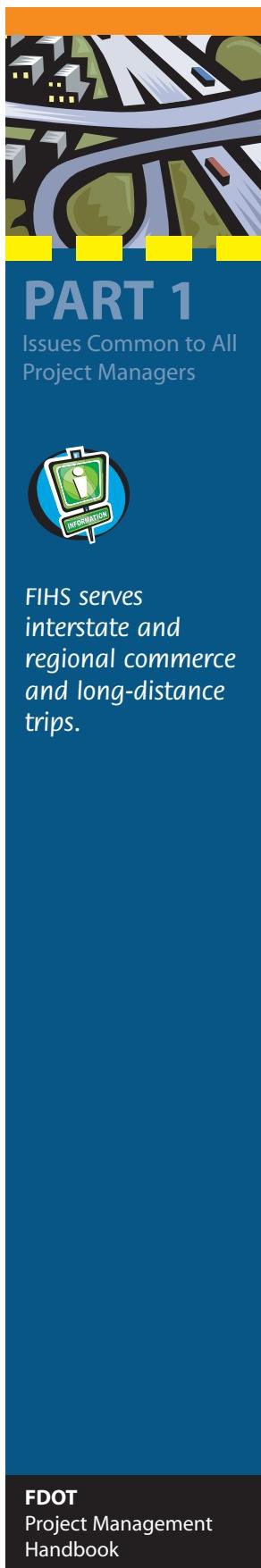
- Improve incident management to minimize the impact on traffic flow.
- **Economic Competitiveness:** *A transportation system that enhances Florida's economic competitiveness.* The following objectives support this goal:
 - Establish, construct and manage Florida's Strategic Intermodal System.
 - Provide for smooth and efficient transfers for both passengers and freight between seaports, airports, railroads, highways and other elements of the strategic intermodal system.
 - Reduce delay for people and goods movement through increased system efficiency and multimodal capacity.
- **Quality of Life:** *A transportation system that enhances Florida's quality of life.* This goal is supported by the following objectives:
 - Design the transportation system to support visions of communities and to be compatible with corridors of regional and statewide significance.
 - Design the transportation system to include human scale, pedestrian, bicycle, transit-oriented and other community-enhancing features, where appropriate.
 - Design the transportation system in a way that sustains human and natural environments and conserves non-renewable resources.
 - Increase access to and use of alternatives to the single-occupant vehicle.
 - Enhance the availability of transportation services to persons who are transportation disadvantaged; and ensure the efficiency, effectiveness and quality of those services.
 - Ensure that the transportation decision-making process is accessible and fair for all communities and citizens of Florida.

FTP Short Range Component. The Short Range Component of the FTP establishes three "strategic goals" to support the FTP over the coming five to ten years. The short range goals encompass the long range goals of the FTP and the strategic objectives as adopted:

1. Preserve and manage a safe, efficient transportation system.
2. Enhance Florida's economic competitiveness, quality of life and transportation by:
 - Working with partners to provide mobility choices.
 - Focusing state resources on facilities of statewide importance.
 - Designing system improvements that are compatible with community plans.
 - Strengthening partnerships and seeking early resolution of project development issues.
 - Working with partners to reduce transportation-related fatalities and improve transportation safety.
3. Pursue organizational excellence as we carry out our responsibilities including satisfying our customers, delivering the work program and strengthening the effectiveness of the Department.

More detailed information on the relationships among FTP goals and long range objectives, short range objectives, focus areas, lead programs and measures is available on the [Office of Policy Planning](#) website.

CHAPTER 7 - The Transportation Planning Process



The cover features a stylized illustration of a city street with buildings and roads at the top. Below this, the title "PART 1" is prominently displayed in large white letters on a dark blue background. Underneath "PART 1", the subtitle "Issues Common to All Project Managers" is written in smaller white text. At the bottom left, there is a circular icon containing a smartphone with a green screen displaying a person icon, with the word "Information" written below it. To the right of the phone icon, the text "FIHS serves interstate and regional commerce and long-distance trips." is written in white.

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Modal Planning.

The Department coordinates statewide planning for each transportation mode. It also coordinates intermodal planning.

The Florida Intrastate Highway System (FIHS). The FIHS is a 3,800-mile component of the 12,000-mile State Highway System. Its primary purpose is to serve interstate and regional commerce and long-distance trips. The FIHS makes up only 3 percent of Florida's public roads but carries 31 percent of the traffic. FDOT has prepared an FIHS 2020 Cost Feasible Plan. Each year FDOT reports to the Legislature and the public on the status of the FIHS and the Cost Feasible Plan. This information and additional data can be found at the [FIHS](#) page on the Policy Planning Office website.



Source: Florida State Archives

FDOT periodically updates the FIHS Cost Feasible Plan. During the updates, FDOT works with local governments, Metropolitan Planning Organizations (MPOs) and authorities to ensure that the FIHS Plan and proposed projects are consistent, to the maximum extent feasible, with local government comprehensive plans and MPO Long Range Transportation Plans. Public involvement opportunities are primarily associated with updates or amendments to the local government and MPO plans.

Transit. The Transit Strategic Plan (TSP) serves as the transit element of the Florida Transportation Plan. As such, it helps provide the policy framework that links Florida's transit goals and objectives with the Five-Year Work Program. Current policies support the development of a transit system with a mix of modes (shuttle buses, vanpools, local bus, express bus, rail transit, people movers, commuter rail, and water ferries) that are integrated with the overall transportation system. FDOT has completed the Transit 2020: Florida's Strategic Plan for Public Transportation.

Aviation. The Florida Aviation System Plan (FASP) serves as the aviation element of the Florida Transportation Plan. The FASP ensures that Florida's airports provide a link to the global air transportation system, work together effectively as a statewide transportation system and integrate with other transportation systems including rail and transit systems. It identifies the runways, taxiways and access roads required at public airports to meet future aviation needs. FDOT updates the FASP about every five years.

Rail. The majority of Florida's railroad lines, terminals and other rail facilities are owned by private companies, except for 81 miles owned by the State of Florida. FDOT develops the Rail System Plan (RSP) in cooperation with these private companies, the private sector, local governments, MPOs and local rail authorities. This plan emphasizes the use of existing facilities and coordination with other modes of transportation. The RSP addresses the proper maintenance, safety, revitalization and expansion of highway/rail grade crossings and signals. This plan includes identification of priorities, programs and funding required to meet state needs. The RSP is updated every two years.

Seaports. The Florida Seaport Mission Plan ("1998/1999-2002/2003, A Five-Year Plan to Accomplish the Mission of Florida's Seaports") serves as the seaport element of the Florida Transportation Plan. All public involvement opportunities associated with the Florida Transportation Plan also provide the public with the opportunity to comment on issues related to seaports. These comments are used when the seaport plan is updated each year. Additionally, FDOT works closely with the Florida Seaport Transportation and

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The Strategic
Intermodal System
focuses on end-to-
end trips.

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Economic Development (FSTED) Council and with members from each of the 14 deepwater ports on issues related to ports and port needs.

The Seaport Mission Plan must be updated every year and a copy provided to the President of the Senate, Speaker of the House and Governor. Public comment on the Plan, including suggested changes, can be provided directly to the Florida Ports Council, P.O. Box 10137, Tallahassee, Florida 32301. The document is wholly prepared by members of the FSTED Council through their third-party administrator, the Florida Ports Council. Although the Department is afforded a last-minute opportunity each year to review and edit final drafts, it has little control or contribution to the document since it is prepared collectively by the 14 member seaports.

Intermodal. Highways, airports, seaports, transit systems, railroads, truck terminals, and so forth are owned and operated by a wide array of local and state governments, authorities and private transportation companies. Therefore, planning and coordination are very complex. To address these complexities, a Strategic Intermodal System (SIS) is being developed in cooperation with all of Florida's transportation partners. The SIS represents a fundamental shift in the way Florida views the development of—and makes investments in—its transportation system. Development of the SIS reflects an effort to focus on complete end-to-end trips, rather than individual modes or facilities. It reflects an effort to link Florida's transportation policies and investments to the state's economic development strategy, in keeping with the Governor's strategic imperative of diversifying Florida's economy. Finally it reflects an effort to redefine roles and responsibilities in the planning and managing of Florida's transportation—with the state focused primarily focused on statewide and interregional trips and strengthened regional partnerships providing a structure to identify and implement regional priorities. The SIS as well as individual mode plans can be found at the [Public Transportation](#) website.

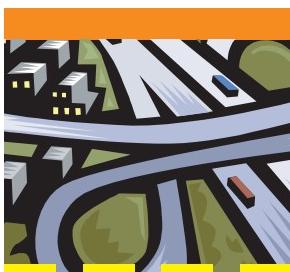
Other Modes. There are no long range statewide plans for bicycle and pedestrian facilities. FDOT Bicycle and Pedestrian Coordinators are responsible for bicycle and pedestrian safety programs and for the implementation of bicycle and pedestrian facilities on construction projects. Bicycle and pedestrian projects may be scheduled as part of the many "3-R" (resurfacing, restoration and rehabilitation) projects FDOT carries out. In addition, local governments and MPOs can apply for funds for these projects under the Enhancement Program.

The Commission for the Transportation Disadvantaged is an independent commission established by state law. The mission of the Commission is to ensure the availability of efficient, cost-effective and quality transportation services for transportation disadvantaged persons. The Commission has prepared 5-year and 20-year plans for transportation disadvantaged services.

Regional Planning

Regional Planning Councils (RPCs), comprised of local elected and appointed officials, consider planning and development issues from a multi-county perspective. Florida's RPCs review and comment on local government comprehensive plans, particularly for regional issues. RPCs administer Development of Regional Impact (DRI) applications and reviews. They are responsible for the development of Strategic Regional Policy Plans that contain regional goals and policies for regional transportation, economic development, natural resources and other issues.

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The MPO is responsible for developing the LRTP for urban areas.

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Five Water Management Districts are responsible for water quality and quantity issues. Their most significant role in transportation is in their assessment of impacts on water resources during project development, design and construction activities.

Metropolitan Planning

Transportation planning in metropolitan areas is the responsibility of Metropolitan Planning Organizations. MPO boards consist of elected representatives of local governments. MPOs have a professional staff and are assisted by various committees, such as a Technical Advisory Committee, which includes professionals from local agencies and FDOT, and a Citizen Advisory Committee. A list of the Florida MPOs and links to individual websites can be found on the website of the [Metropolitan Planning Organization Advisory Council](#).

Urban transportation planning and the advent of MPOs began with the passage of the Federal-Aid Highway Act of 1962. This act required, as a condition of federal financial assistance, that transportation projects in urbanized areas with a population of 50,000 or more be based upon a continuing, comprehensive, and cooperative or ("3-C") planning process undertaken cooperatively by state and local governments. Subsequent acts have added to the original, but the basic principles of a continuing, comprehensive and cooperative planning process have remained constant. The Transportation Efficiency Act for the 21st Century (TEA-21) and its predecessor, the Intermodal Surface Transportation Act (ISTEA), further strengthened the process by adding additional responsibilities to both the MPOs and the state transportation agencies.

The federal requirements concerning MPOs have evolved over the years. A great deal of flexibility exists in the specific manner the MPOs are organized and operate. However, all must produce a cost feasible long range plan and a short range Transportation Improvement Program. The latest legislation requires that the Long Range Transportation Plans (LRTPs) be based on a 20-year planning horizon and be cost-feasible, using reasonably expected revenue projections. TEA-21 requires that the long range planning process focus on seven broad planning considerations:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency.
- Increase the safety and security of the transportation system for motorized and non-motorized users.
- Increase the accessibility and mobility options available to people and for freight.
- Protect and enhance the environment, promote energy conservation and improve quality of life.
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Promote efficient system management and operation.
- Emphasize preservation of the existing system.

TEA-21 also requires that any Intelligent Transportation System (ITS) projects be in conformance with the National ITS Architecture and Standards. To implement this requirement, FHWA requires each MPO area to have a regional ITS architecture and the MPO Long Range Transportation Plan to have an ITS element.

CHAPTER 7 - The Transportation Planning Process



The cover features a stylized illustration of a city skyline with buildings, roads, and green spaces. The title "PART 1" is prominently displayed in large white letters, with "Issues Common to All Project Managers" in smaller white text below it. A circular icon containing a smartphone with a green screen and the word "INFORMATION" is located on the left side.

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The short range program programs and schedules specific projects.

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Metropolitan Long Range Planning. There is no single methodology or process that must be used for developing long range transportation plans. Long Range Transportation Plans (LRTPs) should reflect the goals, objectives and values of each community. At the beginning of the process each community must establish factors considered important to the local citizenry and address state and federal requirements. These factors should also be consistent with the Florida Transportation Plan (FTP).

The MPO is responsible for developing the LRTP in urbanized areas. The general process used to develop the LRTP is illustrated in Figure 7-1, Plan Development and Approval Process, presented at the end of this chapter. The intent and purpose of the LRTP is to encourage and promote the safe and efficient management, operation, and development of a cost feasible intermodal transportation system that will serve the mobility needs of people and freight within and through urbanized areas of this state, while minimizing transportation-related fuel consumption and air pollution. The LRTP must include long range and short range strategies consistent with state and local goals and objectives. The LRTP addresses at least a 20-year planning horizon. An interim period (usually 10 years) can also be included, particularly in areas that do not meet the national ambient air quality standards, as enforced by the Environmental Protection Agency (EPA). "Non-attainment" areas do not meet the standards; "attainment" areas meet the standards; and "maintenance" areas previously were non-attainment but redesignated as attainment, subject to implementation of a maintenance plan. The plan should include both long range and short range strategies and actions that lead to the development of an integrated intermodal transportation system that facilitates the efficient movement of people and goods.

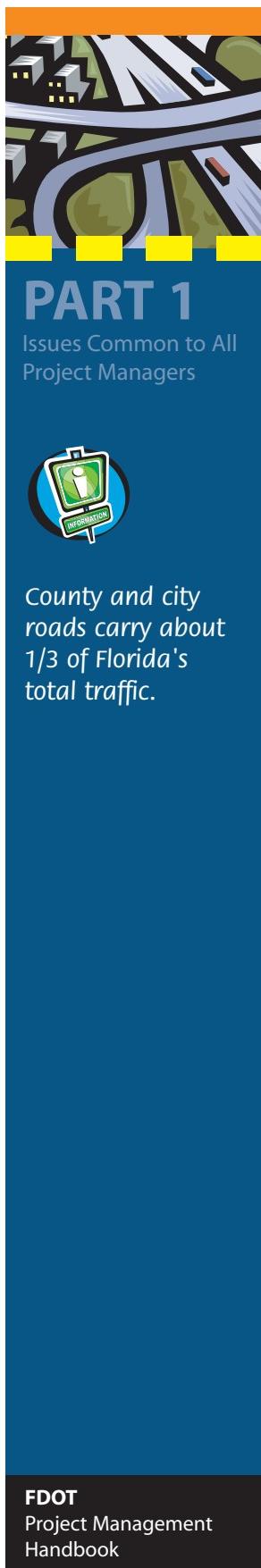
The LRTP is reviewed and updated at least every five years in attainment areas and every three years in non-attainment and maintenance areas. Updates extend the forecast period and confirm the validity and consistency of the LRTP with current and forecast transportation and land-use conditions and trends.

The LRTP may be amended at any time. The plan amendment process is subject to all the requirements of a plan update, including public involvement. Documentation shall include, but is not limited to: a revised analysis of the impacts of the proposed plan revision to the transportation system and air quality (for non-attainment areas), documentation of the public involvement process, new maps, documentation and data files of the revised model and/or technique, and a revised balancing of project costs versus forecast revenues. The MPO must adopt long range transportation plan amendments. Amendments may result from changes to the financial plan, the addition of new projects, and changed priorities (for example, moving projects from the Needs Plan to the Cost Feasible Plan).

An LRTP is not required for non-urbanized areas. Transportation improvements in these areas are based on plans developed by local agencies and, for state roads, the work program.

Transportation Models. All metropolitan long range transportation plans at some stage require an analysis to differentiate among competing needs and to document the impact of projects on congestion, air quality and land use. For such analyses, the Department has developed a standard transportation model structure that is available for use by all Florida MPOs. The methodology used in the Florida Standard Urban Transportation Model Structure (FSUTMS) is documented in numerous technical memoranda published by the Department. The MPO may use any analytical techniques and/or models after consultation with the Department. The MPO should provide documentation in the LRTP of the models used. In addition, the MPO should prepare a series of technical memoranda

CHAPTER 7 - The Transportation Planning Process



The image shows the front cover of the "FDOT Project Management Handbook, PART 1: Issues Common to All Project Managers". The cover has a blue background with a yellow border at the top. At the top, there is a stylized illustration of a city street with buildings, trees, and a road. Below the illustration, the word "PART 1" is written in large white letters, followed by the subtitle "Issues Common to All Project Managers" in smaller white letters. In the center, there is a circular icon containing a smartphone with a green screen displaying a map or chart, and the word "Information" below it. At the bottom of the cover, there is a dark blue footer bar with the text "FDOT Project Management Handbook" in white.

PART 1
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County and city
roads carry about
1/3 of Florida's
total traffic.

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explaining model use and detailing how these techniques can be used in various planning applications. Consultants and the Department can then duplicate and use the preferred MPO model.

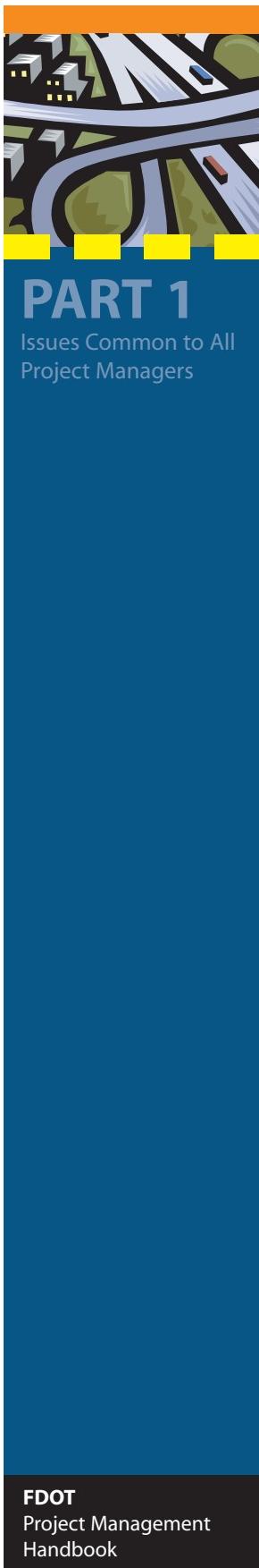
Short Range Planning. While the LRTP provides a long term guide for the development of a regional transportation system, a short range program, known as a Transportation Improvement Program (TIP), actually programs and schedules projects. This five-year, prioritized plan describes specifically which transportation improvements will be implemented and when. The TIP is updated every year to remove those projects completed, add new projects and reflect changed priorities of the MPO. The TIP includes many local agency projects as well as those for the FDOT. Federally funded projects (highway and transit) must be included in the TIP to secure federal funding. The MPO establishes a list of priority projects for FDOT to include in its five-year work program. This list is normally prepared in the summer of each year at the beginning of the Department's Work Program development cycle. The Department will use the list of projects to define the new fifth year of the work program. The MPOs are notified of projects to be included in the new fifth year so that they can be incorporated in future TIPs. TIPs are not required for non-urbanized areas.

Local Government Planning

Florida's 67 counties and over 400 municipalities play significant roles in planning and providing transportation services. Each local government has adopted, and periodically revises, a comprehensive plan to guide growth, development and the provision of government services for periods of 5 to 20 years. Future development and public facilities such as those for transportation must be consistent with those plans.

Counties are responsible for building and maintaining county road systems, which comprise about 69,000 of the 114,000 miles of Florida's public roads and streets. Municipalities are responsible for another 33,000 miles of streets. Together, they carry about one-third of Florida's daily traffic. Local governments are responsible for most public transit systems, airports and seaports either directly or in conjunction with special authorities created to manage and provide services. Some local authorities—such as expressway authorities—operate independently from local governments, although most authority board members are usually appointed by local governments. A few, such as the Tri-County Commuter Rail Authority in southeast Florida, serve more than one county.

Transportation authorities in many areas of the state manage specific transportation services such as toll bridges and expressways, public transit, commuter rail, aviation and seaports. These authorities may establish long range plans for their facilities and services, such as expressway system plans, commuter rail system plans, and master plans for airports and seaports. Public involvement opportunities vary among the authorities and according to the types of plans that are being prepared or updated.



Internet References

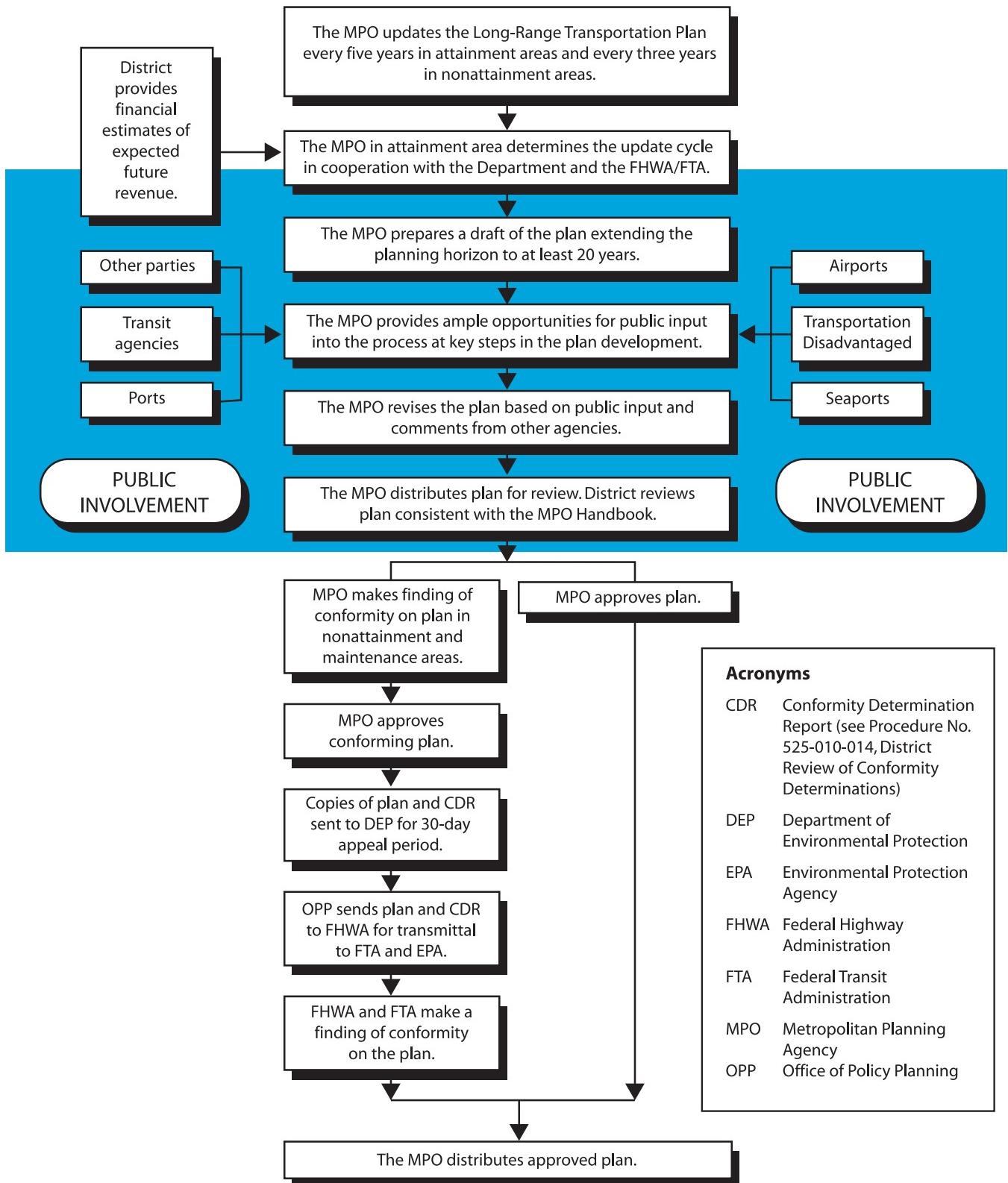
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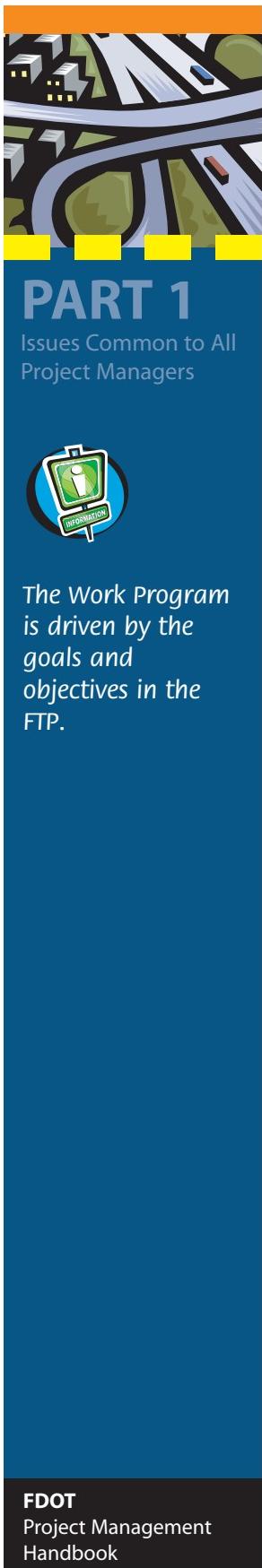
- [Office of Policy Planning](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policy Planning*
- The [FIHS](#) page
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 1. <http://www.dot.state.fl.us/>
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 3. *Public Transportation*
- The [Metropolitan Planning Organization Advisory Council](#).
 1. <http://www.MPOAC.org>

CHAPTER 7 - The Transportation Planning Process

Figure 7-1

Plan Development and Approval Process





CHAPTER 8

Work Program

The process used to identify and track the Florida Department of Transportation's large volume of work and the appropriated budget is the Work Program. The Work Program process manages about \$5 billion each year. Some basic principles underlie this unique process:

- The FDOT operates primarily from dedicated sources of funding, both state and federal. The State Transportation Trust Fund receives revenue from specific tax sources "dedicated" to transportation.
- The Department resembles a private-sector company in that it must forecast revenues and develop a Finance Plan. The Finance Plan takes into account levels of expenditures as well as federal aid and state revenues to determine a cash balance. By law, the program must balance expenditure and revenue forecasts.
- The program is driven by policies and program objectives outlined in the Florida Transportation Plan (FTP).
- The Secretary of Transportation formally adopts the new Work Program each July. The Work Program lists the specific projects to be funded over a five-year period.
- The Department's funds are allocated among the seven districts by detailed formulas and procedures. Districts have the authority to determine the best use of their funds in a manner consistent with the Work Program Instructions (WPI) and the policies and objectives outlined in the short range component of the Florida Transportation Plan. Both documents are updated and published annually.
- The districts and Central Office staff, working with the Metropolitan Planning Organizations (MPOs) and local governments, develop the Department's Work Program. Input is also received through public hearings and from the Legislature and the Governor's Office. The program has to be consistent with the capital improvement element of local comprehensive plans.

Developing the Work Program

The Florida Transportation Plan (FTP) and the Program and Resource Plan guide the development of the Work Program. The FTP is the blueprint that sets the policy framework of the Department. The Program and Resource Plan links the FTP, the Legislative Budget Request and the Five-Year Work Program. Consequently, the development of the Department's Work Program and the appropriation request can be described with the term "Policy to Projects." This process ensures that the transportation products and services provided to the people of Florida are consistent with policy direction.

This complex process begins in the summer. The Department's Executive Committee meets and sets the directives based on the agency's goals and objectives. After the Executive Committee issues the directives, the Operating Legislative Budget Request (LBR) is developed. The LBR reflects the requested budget amounts by budget entity and appropriation category. The Central Budget Office coordinates with the district and

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The FDOT prepares a five-year Work Program annually.

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Turnpike Enterprise budget coordinators, along with the Office of Work Program, to develop the LBR.

The LBR is due to the Legislature and the Governor's Office by September 1. Simultaneously, work has begun on a new Tentative Work Program. The new Five-Year Tentative Work Program provides an update to the existing Adopted Work Program for the first four years. The Tentative Work Program represents the first formal project-level programming for the new fifth year.

Annually the Department prepares the Five-Year Work Program pursuant to Section 339.135, Florida Statutes. The Work Program must be a balanced financial plan that provides a list of transportation projects (by phase) that are scheduled for implementation during the ensuing five-year period. It includes all proposed project commitments classified by major program and appropriation category. Projects are scheduled by phase (i.e., planning, design and construction) because it usually takes several years to complete a project. Phases are defined by number and description. Figure 8-1 presents Work Program Phase Descriptions and Figure 8-2 presents the same information for Local Agency Program Projects (LAPs).

Figure 8-1
Work Program Phase Descriptions

| Phase | Description |
|--------------|-----------------------------|
| 3B | PE Service Contract |
| 11 | Planning In-House |
| 12 | Planning Consultant |
| 14 | Planning Grant |
| 21 | PD&E In-House |
| 22 | PD&E Consultant |
| 31 | PE In-House |
| 32 | PE Consultant |
| 4B | R/W Service Contract |
| 41 | R/W In-House |
| 42 | R/W Consultant |
| 43 | R/W Land |
| 45 | R/W Relocation |
| 46 | R/W Utility |
| 5A | Construction Contract Bonus |
| 52 | Construction Contractor |
| 54 | Construction Grant |
| 56 | Construction Utility |
| 57 | Construction Railroad |

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The WPI begins the
Work Program
development.

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Figure 8-1(Cont.)
Work Program Phase Descriptions

| Phase | Description |
|--------------|---------------------------------|
| 61 | Construction Support In-House |
| 62 | Construction Support Contractor |
| 71 | Maintenance In-house |
| 72 | Maintenance Consultant |
| 74 | Maintenance Grant |
| 84 | Operations Grant |
| 94 | Capital Grant |

Figure 8-2
**Work Program Phase Descriptions
Local Agency Projects (LAP)**

| Phase | Description |
|--------------|--------------------------------|
| 28 | Planning Other Agencies |
| 28 | PD&E Other Agency |
| 38 | PE Other Agency |
| 48 | R/W Other Agency |
| 58 | Construction Other Agency |
| 68 | CEI Other Agency |
| 78 | Maintenance Other Agency |
| 88 | Operations Other Agency |

Work Program Instructions (WPI) and fund allocations communicate funding and policy directives to the districts and the Turnpike Enterprise. Instructions for building a Five-Year Work Program to the specification of the Program and Resource Plan are contained in Schedule A for fund allocations and Schedule B for program performance targets. The WPI and Schedules A (fund allocations) and B (program targets) can be found at the [Program Development Office](#) website.

The development of the Work Program involves three distinct sequences: gaming, tentative and adopted. Each is accomplished via remote computer terminals in district offices as well as the Turnpike Enterprise and Central Offices. During gaming, the districts use the Work Program Administration (WPA) files and Schedules A (fund allocations) and B (program targets) to project scenarios of alternative projects. The Work Program Instructions contain the following basic guidelines for this process:

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Issues Common to All
Project Managers

The Work Program is prepared in cooperation with the MPOs.

The PM must keep the Work Program data current.

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- The district Work Program shall be developed cooperatively from the outset with the various Metropolitan Planning Organizations of the state and include, to the maximum extent feasible, the project priorities of MPOs that have been submitted to their districts by October 1 of each year.
- When developing the Work Program, the first priority should be given to projects listed in the current Adopted Work Program. In other words, all projects included in the second year of the previously Adopted Work Program must be advanced to the first year of the Tentative Work Program. Exceptions must be approved by the Secretary.
- To maximize federal aid, districts are encouraged to identify and assign federal funds, when available, to projects prior to using state-allocated funds.
- During gaming, the districts and the Turnpike Enterprise must program up to the established target levels in Schedule B. Further, to ensure that the Department maintains a financially balanced program, districts cannot exceed fund allocations found in Schedule A.

By the end of the gaming process, and prior to submitting the Tentative Work Program to the Central Office, the districts and Turnpike Enterprise must adhere to the following:

- Have projects identified, scheduled and balanced to fund allocations
- Present the Work Program to the MPOs to determine if changes are necessary
- Hold public hearings

For more information on this process, see [Developing the Work Program](#).

The Project Manager's Role in the Work Program

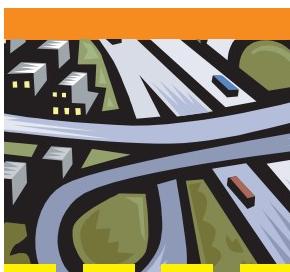
Although it is important to understand the process, Project Managers are not normally involved in the process of developing the Work Program. Project Managers, however, must know what is in the Work Program that pertains to their projects and the implications of that information. The project must be in the Adopted Work Program to be undertaken. If federally funded, the project must be included in the State Transportation Improvement Program (STIP); and, if in an MPO area, must also be included in the MPO's Transportation Improvement Program (TIP).

The Project Manager must ensure that the Work Program estimate for each phase is valid. She/He must also ensure that the project can be produced as scheduled. It is the Project Manager's responsibility to keep the Work Program data current.

Changes That Must Be Reported: The District Work Program Manager must be kept abreast of key developments in a project as they relate to the Work Program. It is particularly important to update the Work Program before proceeding to contract advertisement and letting. The following are examples of changes that should be reported:

- Estimated costs (increased or decreased)
- Project concept and scope
- Project limits
- Letting date
- Contract supplemental agreements

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Federal authorization is required prior to any work on a federal aid project.

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- Planned phases
- Needs to change programmed years

Failure to Report Changes. If the Project Manager fails to notify the Estimates Office of significant changes, the TRANSPORT system will not be updated. On federally-funded projects, a Transportation Improvement Plan (TIP) and State Transportation Improvement Plan (STIP) amendment may be required if the scope of the project or estimate changes significantly. Amending these projects will have the following outcomes:

- Changes in the estimate will require that the Work Program be re-balanced to account for these shifts (reserves reduced or estimate increased).
- A project scheduled for letting may be delayed. Approval of Work Program amendments typically takes from four to eight weeks.
- Related activities such as right of way and utility reimbursables will be affected.

Work Program Amendments. A Work Program amendment will be required if:

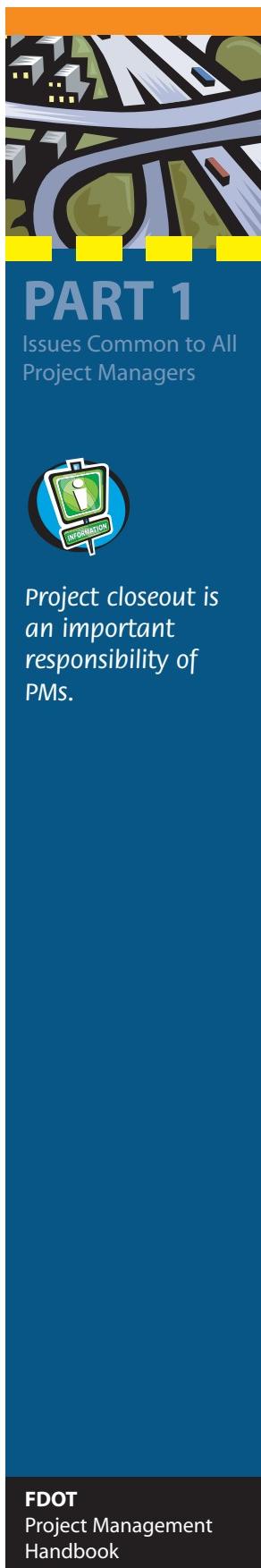
- Any right-of-way, construction, or public transportation phase costing over \$500,000 appropriated funds is advanced or deferred in the Work Program.
- A preliminary engineering phase costing over \$150,000 appropriated funds is advanced or deferred in the Work Program.
- Any project or project phase costing over \$150,000 appropriated funds is added to the Work Program in the current year.
- Any project is deleted from the Work Program.

STIP/TIP Amendments. Formal amendments in the STIP or TIP will be required if the change results in one of the following:

- Adds new individual projects to the current STIP/TIP
- Affects air quality conformity
- Adversely impacts financial constraints
- Results in major scope changes
- Removes or deletes an individually listed project from the STIP/TIP

Federal Aid. It is the responsibility of the Project Manager to ensure that Federal Aid Coordinators are notified in a timely manner of the need to request federal authorizations for federally funded projects. This responsibility includes ensuring all the required prerequisite criteria are met (and supporting materials are available) before requesting the Federal Aid Coordinator to prepare the authorization request. The PM is responsible for obtaining federal aid project numbers assigned to all phases of work. Costs will not be reimbursed by the Federal Highway Administration (FHWA) on any transportation project unless the federal authorization approval is obtained prior to work beginning on the project. Complete instructions on the authorization process are found in **Procedure No. 350-050-005, Federal Aid Authorizations**. The PM must close each phase of work in a timely manner upon completion. This includes completing all the required documentation necessary to close the project with FHWA. The PM should work with the Federal Aid Coordinator to accomplish this work.

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Local Funds. Local funds must be deposited with the Department prior to advertising locally funded projects and encumbering the contract funds.

Project Closeout. Project closeout is also an important Work Program task of the Project Manager. As the project is brought to completion, the Project Manager should work with the district Work Program Manager and Comptroller's staff to close out the project. The Project Manager must ensure that final invoices are submitted and processed as quickly as possible. Upon payment of the final invoice, the district Work Program Office will de-encumber any remaining funds. Final reimbursement of federal funds cannot be requested until proper project closeout. Improper closeout documentation can affect billions of dollars of federal reimbursement.

Additional Information

The Work Program may be viewed at the project/phase level on the FDOT infonet. This program is accessed by going to the *Finance and Administration* site and clicking on *Item Segment Overview*. A project can be viewed at item level, or many projects can be reviewed by selecting one or more of the criteria on the screen. The codes are written out so that they can be followed easily.

Further details on the Work Program process can be found by visiting the Work Program Office infonet website listed above. It contains the calendar with timelines and schedules, the Five-Year Work Program, and the Work Program Instructions. The Work Program Instructions contain all information concerning programs and funds along with contact people for each area. The Appendices of the Instructions list all data elements involved in the programming of projects.

Internet References

Internet references cited in the chapter are linked directly in the text or can be found below.

- [Program Development Office](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Program Development Office*
 4. *Procedure 375-030-001*
- [Developing the Work Program.](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Program Development Office*
 4. *Developing the Work Program*
- Procedure No. 350-050-005, [Federal Aid Authorizations](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 300*
 6. *Procedure No. 350-050-005*



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Project book:

- Project scope
- Summary of key issues
- Key documents'
- Recommendations for next phase

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CHAPTER 9

Project Continuity

A primary objective of all Project Managers is to understand clearly the history of a project and to ensure a smooth transition to the next phase. A typical Florida Department of Transportation (FDOT) project can take many years to move through the planning, project development and environment (PD&E), design, right of way and construction phases. Throughout the life of a project, there will be a number of both FDOT and consultant Project Managers. At each step of the way, many decisions are reached, commitments made and technical detail added. Coordination and hand-off of projects from phase to phase is very important. Valuable work performed in earlier stages must not be lost, and all commitments must be fulfilled. It is also important that each Project Manager have an understanding of the history of the project, including its conceptual objectives. Several districts have policies for project continuity that must be followed. This chapter provides helpful ideas for implementing these policies.

In general, a project concept file or book should be maintained. It will be handed off at each phase. This file should contain the original project scoping report, a summary of the key issues that faced each phase Project Manager, references of key documents produced in the project and the recommendations of each Project Manager for the next phase. Since the right of way (R/W) phase overlaps the design phase, a copy of the book should be made for the right of way Project Manager. He/She can return the updated copy to the design PM at the end of the R/W phase, and then the original book can be updated.

Commitments (including those made to local governments, permitting agencies, business and property owners, utilities, homeowner associations, and any other individuals and groups) must be tracked through each project phase. Some districts have instituted formal commitment tracking systems that are very helpful for this purpose. If there is not such a system, each Project Manager should provide a listing of the commitments that includes a summary of the commitment, the name of the individual, group or agency making it, and its date and document file reference. The receiving Project Manager must review the commitments made previously and honor them.

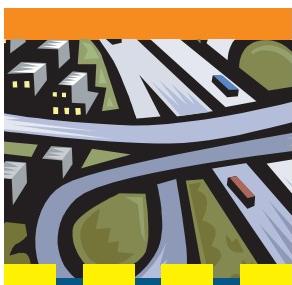
The Project Manager for the next phase should be identified and become an active participant in the project before the handoff-date. This procedure allows the gaining Project Manager to become familiar with the project and to participate in decisions that will directly affect his/her phase of the work. The gaining Project Manager should consult frequently with the previous phase Project Manager on sensitive and unclear issues to understand the project history, ensure continuity, and avoid duplicate, unnecessary and inappropriate work.

Phase Hand-Offs

Planning to PD&E. The planning process discussed in Chapter 7 identifies transportation needs, which drive the Work Program discussed in Chapter 8. When a project enters the Work Program, a project scoping report is prepared that includes project objectives, design concepts, schedule and budget (by phase). This scoping report is the basis of the work program data for the project. Generally, the first phase of a specific project is PD&E.

Planning projects are programmed and funded before the identification of specific projects. It is not known at the initiation of a planning study if a project is needed and justi-

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PMs for each phase should overlap with the previous phase.

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fied. Not all planning studies identify specific projects, but many corridor, area, feasibility and conceptual studies result in the recommendation of projects. Commonly, corridor and area studies will identify large-scale transportation needs, which will later be broken into smaller projects that can be more easily funded and managed. When projects are likely to be initiated as a result of a planning study, the planning report should, whenever possible, define the project objectives, establish the need for the project, identify design concepts, identify project limits and provide initial cost estimates. Political, public and stakeholder issues as well as potential environmental issues should be identified.

When a project scoping report is prepared, any corridor, area or feasibility reports that are available must be reviewed carefully to identify all pertinent information. This information will help make the project scoping report as complete and accurate as possible. Appropriate planning studies should be referenced in the project scoping report.

At the initiation of a PD&E project, the Project Manager should review carefully the project scoping report and all referenced planning studies and use this information to plan the PD&E project.

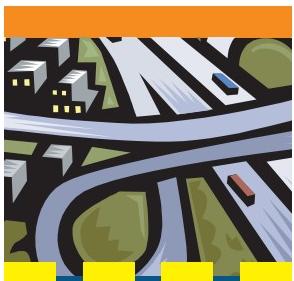
The Florida Department of Transportation, working in conjunction with the Federal Highway Administration and other federal, state and local agencies, is developing a refined and improved methodology for effecting improved transportation decisions. This process redefines how FDOT will accomplish transportation planning and project development within its current statutes and regulations. This Efficient Transportation Decision Making (ETDM) process creates linkages between land use, transportation and environmental resource planning initiatives. ETDM will result in more effective integration of the planning and PD&E phases and facilitation of project hand-offs.

PD&E to Design. The design Project Manager should be designated before the completion of the PD&E project so that an effective overlap will take place. The design Project Manager should take an active part in the PD&E project and make an effort to attend all public meetings and hearings. These events provide an excellent overview of the project and all associated key issues.

The PD&E report and/or environmental documentation will contain the improvement alternatives considered, the selected alternative, anticipated socio-economic and environmental impacts, permitability, and projected right of way and construction costs. All this information is valuable for planning a design project. The PD&E Project Manager should consider preparing a design hand-off report that summarizes the key information from the PD&E report and clearly lists all commitments made to local government and permitting agencies, business and property owners, and any other groups. PD&E Project Managers should remember that PD&E projects are frequently subdivided into more than one design project. Often gaps of several months or years occur between the end of a PD&E project and the beginning of a design project. A hand-off file containing the original project scoping report, a hand-off report, and either a reference to the PD&E report (with appropriate extracts) or the report itself should be assembled by the PD&E Project Manager. The PD&E and design Project Managers should meet to ensure that all appropriate information is handed off.

If the initial phase of a project is design rather than a PD&E, the design Project Manager should begin building a project history file with the project scoping report, environmental reports and any project conceptual information available. Generally, projects that have not gone through the PD&E phase are relatively small and limited in scope, such as safety, minor capacity improvements and Resurfacing, Restoration and Rehabilitation (RRR) projects. The justification for safety projects normally includes a benefit/cost analysis. Adding

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A successful hand-off to the next phase must be an objective of each PM.

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project features that result in additional cost can change the original justification, so the budget should be a major consideration in the scoping process. Districts are allocated RRR funds based on a fixed amount per lane mile for resurfacing plus a limited amount for other improvements and upgrades. When these projects are scoped it is important to clearly understand the project objectives and available funds. Procedure No. 625-000-007, Sections 2 and 3, [Chapter 25](#), Plans Preparation Manual, Volume I, gives guidance for scoping RRR projects.

Design to Right of Way. The right of way Project Manager should be involved with a project beginning with the PD&E phase. The right of way Project Manager must be consulted during design (and PD&E) to ensure that appropriate and realistic right of way impacts and costs are considered. The right of way phase officially begins during the design phase. All commitments that have been made from the beginning of a project must be made available to the right of way Project Manager.

Right of Way to Design and Construction. During the right of way process, there must be frequent communications and careful coordination between right of way and design. Small changes in the design can have a major impact on right of way, and right of way commitments must be accounted for in the design. When appropriate, right of way commitments should be shown on the construction plans. For instance, there may have been a commitment to preserve certain trees within acquired R/W. A final meeting near the end of the right of way phase should be held to ensure that all issues have been coordinated. Construction should be part of this meeting so that all important right of way issues and commitments impacting the construction project are understood.

Design to Construction. The construction Project Manager should be involved in the design of a project from the outset, and the design PM should continue to be involved through construction completion. The construction Project Manager should review the plans at each phase submittal to ensure that the project is constructable. The familiarity gained through these reviews will greatly aid in planning the inspection and engineering efforts required for the construction project.

There should be a formal hand-off meeting between the design and the construction Project Managers. This meeting should include the right of way PM and representatives of all appropriate support offices. Among the key issues to be coordinated are:

- Right of way.
- Traffic control plans.
- Environmental concerns, including permit conditions and requirements.
- Utilities.
- Public and political sensitivities.
- Local agency coordination issues.
- All PD&E, R/W and design commitments.
- The designer's intent for complex issues, pay items, specifications, plan notes, project phasing and restricted activities.
- Post-design services on the part of the Engineer of Record, including communication procedures, attendance at construction meetings and contractual issues.

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The cover features a stylized illustration of a highway interchange at night with glowing lights. Below the illustration, the title "PART 1" is prominently displayed in large white letters, followed by the subtitle "Issues Common to All Project Managers". A circular icon containing a smartphone with a green screen and the word "INFORMATION" is positioned to the left of the text. To the right, a vertical column of text reads: "The team approach involves all phase Project Managers from the beginning of the project." At the bottom, a dark bar contains the text "FDOT Project Management Handbook".

Construction to Maintenance. The responsible maintenance professional should be involved in a project from the design phase through the construction phase. The maintainability of a project is an important consideration for both the design and the construction Project Manager. From a life-cycle perspective, maintenance costs can be a major portion of the total project cost. Expenditures during design and construction that improve maintainability reduce cost to the taxpayer in the long run. The responsible maintenance professional and the construction Project Manager should perform an inspection of the construction project in the final stages to identify maintenance concerns that can be addressed prior to completion of the construction project. This inspection is commonly done at 90% complete or sooner. Maintenance should always be invited to participate in the final walk-through inspection before a project is accepted from the contractor. All districts have a formalized turnover process that should be followed at the completion of a project.

Combined Phases. The FDOT frequently contracts for combined phases, such as PD&E and design or design-build. The hand-off between phases that have been combined may not be so well defined as is hand-off of more traditional projects, but the concepts discussed above still apply. When hand-off procedures are not well defined, both the transferring and receiving Project Managers must ensure that all necessary coordination has occurred and that the hand-off is well documented. Previous phase Project Managers must be readily available to respond on a timely basis to questions from subsequent phase Project Managers.

Project Feed Back

Throughout the process, the current phase Project Manager should keep the preceding phase Project Managers informed of problems that have occurred, with the objective of improving future projects. Many districts have formal procedures to identify lessons learned. An effective technique is to conduct an on-site review after the project has been completed. The PD&E, design, construction and maintenance Project Managers should participate. The Florida Highway Patrol may also have useful suggestions. If the review is conducted after the project has been open to traffic from two to five years the project should still be fresh in the minds of those involved in its development, and maintenance and enforcement personnel will have gained some experience with the project. This review team should evaluate project development, design and construction and recommend procedures to enhance performance on future projects. Regardless of the technique used, a lesson is not learned until procedural changes actually take place.

Project Management Team Approach

One strategy to help ensure a more effective hand-off at each phase is the project management team approach. This approach involves designating the likely Project Managers for all phases of a project, from planning (if appropriate) through PD&E, design, right of way, construction and maintenance. For major projects in their early stages, there probably will be changes in future phase Project Managers. Nevertheless, this approach ensures that there is always one designated person who will be responsible for each phase of the project. The chairperson of this team should be the Project Manager of the current phase. This approach will be most effective if all Project Managers stay with the team throughout the project life. Project Managers from early phases will be available to answer questions about history of the project, and Project Managers for future phases will be aware of a project as it progresses from phase to phase.

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Manage a project as if someone else will take it over next week.

A major concern about this approach is the time that may be required of Project Managers with other responsibilities. Using project management teams on large and complex projects only can minimize time demands. Frequent meetings of the team are not necessary. Monthly or quarterly team meetings may be sufficient. Much coordination can be accomplished by e-mail. As one phase comes to an end, the involvement of the next Project Manager will increase. The value of the project management team approach is that a designated individual represents each project phase throughout the life of a project.

Change in Project Managers

FDOT Project Managers. Many FDOT projects last for months or even years. Individuals get promoted or transferred, retire or leave the organization. Project continuity is a serious concern when there is a change of Project Managers during an active project. Project Managers should keep in mind that they may not finish a project. Therefore, project documentation should be maintained in a manner that will make it easy for a successor to take over. Least project interruption occurs when the Project Manager has been diligent about developing a solid Project Work Plan and keeping it current (see Chapter 2), documenting all important activities and decisions, and ensuring that the project files are current, complete and accurate. It is good business to manage a project as if someone else will take it over next week.

As soon as a Project Manager knows that he/she will be leaving a project, the supervisor should be notified and the project records updated. The new Project Manager should be designated as quickly as possible to maximize overlap time of the two PMs. The Project Work Plan is a good checklist for briefing the new Project Manager on key project issues. Every Project Manager develops a list of personal contacts necessary to conduct project business. This list should be shared with the new Project Manager and personal introductions made. The consultant Project Manager should be notified promptly of the pending change, and the new Project Manager should establish a positive working relationship with the consultant as quickly as possible.

Consultant PM. Changes in consultant Project Managers should be handled very carefully since it is likely that the consultant firm was selected in large part on the qualifications of the Project Manager. Therefore, a change in Project Manager has contractual implications. The consultant firm should make every practical attempt to avoid such a change. When it cannot be avoided, the FDOT Project Manager should be notified of the situation immediately. This notification should include a proposed replacement (with qualifications equal to or exceeding those of the original Project Manager) for approval by the FDOT. In addition, the firm should propose a transition plan, developed with the objective of minimizing negative impact to the project. The notification, name of nominated replacement and transition plan should be from the firm's principal in charge of the project.

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Internet References

Internet references cited in the chapter are linked directly in the text and are listed here:

- Procedure 625-000-007 [Volume I, Plans Preparation Manual](#)
 1. <http://www.dot.state.fl.us>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 600*
 6. *Procedure 625-000-007*



CHAPTER 10

Consultant Procurement

Most Florida Department of Transportation (FDOT) projects are accomplished through contracts. The FDOT commonly uses contracts for the following services:

- *Professional Services*
- *Contractual Services*
- *Construction*
- *Maintenance*

This chapter deals with the first two, professional services and contractual services. Chapter 19 deals with construction contracts, and Chapter 21 deals with maintenance contracts. The FDOT Project Manager must understand the contract procurement process well because he/she plays a major role in this process. To a great extent, the success of a project depends on properly scoping the contract and selecting the best consultant available. This is too important an issue for the FDOT Project Manager to leave to others. On the other hand, the consultant Project Manager must also understand the process in order to be selected. For both, the contract procurement process is the first step in the successful completion of a project.

Professional Services

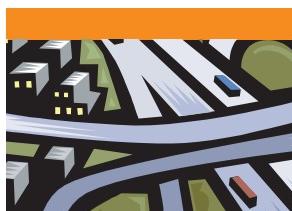
Florida law requires state agencies to acquire certain professional services by competitive negotiation. The process mandates a competitive selection (based on qualifications) followed by contract negotiations to establish a fee for the desired services. The [Consultants' Competitive Negotiations Act](#) (CCNA), Section 287.055, Florida Statutes (F.S.), mandates the following kinds of services be acquired through the CCNA process:

- *Engineering*
- *Surveying and Mapping*
- *Architecture*
- *Landscape Architecture*

In addition, Sections 337.107 and 337.1075, F.S., permit FDOT to acquire certain right of way services and transportation planning services (provided by planners certified by the American Institute of Certified Planners) under CCNA.

The department typically uses this process for planning, PD&E, design, construction engineering and inspection, and general consulting engineering contracts. In FY 2003/2004, over 80 percent of FDOT's design and 70 percent of its construction engineering and inspection (CEI) work was performed by consultants, resulting in an annual budget for professional services of approximately \$500 million.

The primary references that all Project Managers must be familiar with are **Procedure No. 375-030-002**, [Acquisition of Professional Services](#), and [Rule 14-75](#) of the Florida Administrative Code (F.A.C.). The process involves distinct steps described in detail in **Procedure No. 375-030-002**.



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Firms wishing to do business with the FDOT must understand the procedures.

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The Professional Services Procurement Process

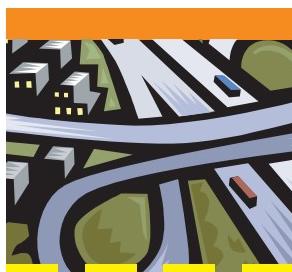
Develop a Plan. The Five-Year Work Program identifies the FDOT Project Manager (PM) for each project. This identification should be the signal for the FDOT Project Manager to visit the district Professional Services Unit (PSU) to begin planning the consultant procurement process. The total process is time consuming and frequently driven by funding requirements. Therefore, coordination should take place before November if a contract is to be executed in the current fiscal year. When federal aid is involved, the process will take more time. The critical points in the process are advertisement, longlisting, shortlisting, final ranking and contract execution. This plan should be prepared jointly by the PM and the PSU.

During this initial period, the project will be listed by Professional Services as a planned project to prompt the interest of consultant firms. The FDOT Project Manager may speak with firms who request information about the project prior to advertisement for professional services, but she/he should not allow firms to market themselves. Once the project is advertised to solicit letters of response, contacts with consultants should cease. At that point, any discussions with a particular firm could be construed as giving that firm an unfair advantage. All communication should be channeled through the PSU after advertisement.

Initial Scope of Services. One of the first milestones is to determine the appropriate work groups and to develop a scope of services for advertisement. Work groups are described in Section 003 of [Rule 14-75](#), F.A.C. Major and minor work groups must be listed in the advertisement. A proposed scope of services is also included in the advertisement. Standard scopes have been prepared for project development and environment (PD&E), roadway and bridge/structural design and construction engineering and inspection (CEI) projects. The PD&E and design [Standard Scopes](#) can be found at the Project Management Office website and the [CEI Standard Scope](#) at the Construction Office website. A standard scope should be used whenever appropriate, but the PM may modify the standard language as necessary to describe accurately the specific work required and to reflect unique district procedures. The following elements should be considered for inclusion in a scope of services:

- The objectives of the project.
- A clear description of the required work.
- A listing of major tasks to be performed.
- An identification of important parameters, constraints and conditions related to the project and associated work.
- A list of all previous work that has been done on the project that can be useful and access to relevant information.
- Schedule requirements including the total duration and any intermediate dates or durations that are important.
- Quality Control Plan requirements.
- A list of required deliverables and reporting requirements.
- Delineation of work and support to be provided by the FDOT and others.
- Unique or special conditions that the consultant should be aware of.
- Post-design services for a design project.

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Base selection on ability to do the work, not the "showmanship" of the proposal or presentation.

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- Options for any additional services that can be foreseen. If there are technical requirements that may be needed but cannot be fully determined initially, it is prudent to include them as options.

The scope should be written to describe the work required, not as directions for the preparation of a proposal or presentation. The new Project Manager may find it helpful to review scopes of currently advertised projects and files of similar projects advertised in the district. The Standard Terms and Conditions for Professional Services Contracts and the standard Method of Compensation language should also be reviewed carefully to avoid duplicating or contradicting these contract elements in the scope of services. Preparation of the draft scope and professional service fee estimate should be coordinated with all appropriate support services, such as surveying and mapping, traffic, materials and right of way. At this point, the Project Manager should also verify the funding for the project with the Long Range Estimate. If the estimated cost of the scoped services and the project funding do not match, one or both must be revised.

Finalize Milestones. Once the PM submits the suggested work types and scope of services, the PSU will establish necessary milestones and enter them into the district Consultant Acquisition Plan (CAP). The dates in the CAP are very important; they should drive the PM's actions concerning procurement. The CAP is usually developed before the Secretary of Transportation approves the Work Program for the next fiscal year. It is posted to the web, ordinarily in February. Generally, the scope and suggested work types are not ready at that time.

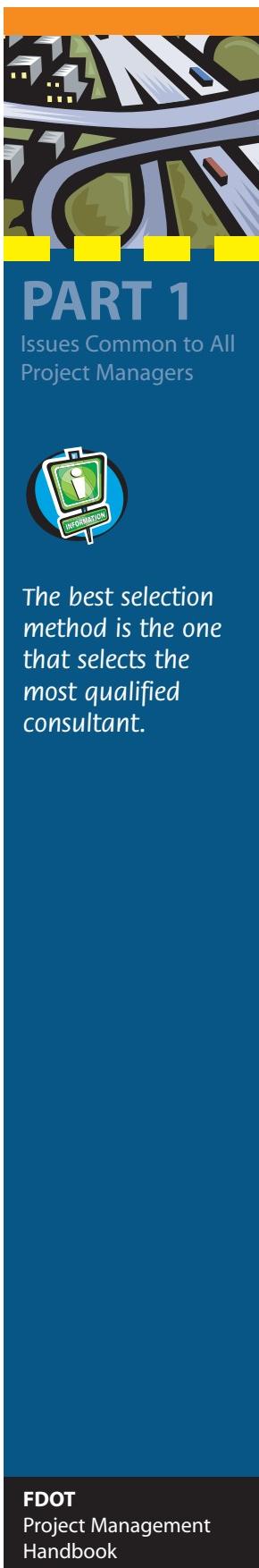
Selection Committee. This committee will make both shortlist and final selections. The Selection Committee composition will vary slightly by district, but it normally includes the District Secretary (who will serve as chairperson) and the District Directors, or their designees. The PM may not serve on the Selection Committee.

Establish the Technical Review Committee. The Technical Review Committee (TRC) develops the longlist. The PM is a member of the TRC and is usually the chair. The TRC members should be selected to match the technical issues that will be important on the project. A person should not accept membership on a TRC if he/she is not able to devote the time necessary to do the job properly. If a member of the TRC has any potential conflict of interest with a firm that has submitted a letter of interest, she/he should not accept membership on the committee. Examples of possible conflicts of interest are: a family member is employed by a competing firm, or the person owns stock in a competing firm. It is best to avoid even the appearance of a conflict of interest. Members of the TRC, as well as Selection Committee members, must sign a Conflict of Interest Certification Form (**Form 375-030-50**) which will be kept on file in the PSU.

Decide the Selection Procedure to Use. The Project Manager should consult with the District Professional Services Office to determine the selection procedure that will provide the information necessary to select the best consultant for the project. This consultation should be done during the development of the CAP. Three selection procedures are: written technical proposals, oral presentations and interviews. An alternate procedure goes directly from letters of response to final rankings. The advertisement must notify consultants if the alternate selection procedure will be used.

Paragraphs 3.6 and 3.7, **Procedure No. 375-030-002, Acquisition of Professional Services**, contain information about making the selection procedure decision. The "best" procedure is the one that will result in selecting the most qualified consultant for the project. Minimizing expense for consultants and the time requirements for the TRC are secondary

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The best selection method is the one that selects the most qualified consultant.

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factors to consider. The following suggestions may be helpful in determining what consultant selection procedure will be most effective:

- Generally, interviews are appropriate for small, relatively simple and district-wide projects. Interviews should include planned questions that are asked of all consultants. But the interview should be structured to allow the interviewers flexibility to pursue lines of questioning that will provide insight into the consultant's qualifications. Interviews are usually the least costly method for consultants.
- Oral technical presentations are most appropriate for PD&E and other projects involving public participation because they provide some insight into the consultant's presentation skills. Consultants should demonstrate awareness of project issues, explain their approach to the project and describe their staffing qualifications and capabilities. The selection of a consultant should be made on the technical qualifications of the firm, not "showmanship." Therefore, presenting consultants should have their key technical personnel proposed for the project make the presentation.
- Written technical proposals are appropriate for large and complex projects. Sample projects, submitted as part of or instead of a technical proposal, can be helpful in evaluating consultants for projects without a specific scope, such as a district-wide project. When technical proposals are submitted, the TRC will take more time to review the material. To reduce this time requirement and expense, a proposal page limit may be set.
- Both technical proposals and presentations may be appropriate for very large and complex projects. The requirements of Section 3.6, **Procedure No. 375-030-002, *Acquisition of Professional Services***, concerning this option must be met.
- For projects that do not require technical proposals or presentations, such as CEI projects or district-wide projects, the alternate selection method may be used, where ranking is made directly from the letters of response. Section 3.7, **Procedure No. 375-030-002, *Acquisition of Professional Services***, should be carefully reviewed when this procedure is used.

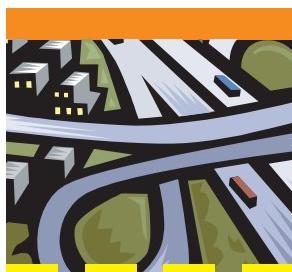
Advertise the Project. Once the project is advertised, the "clock starts." All milestones must be completed on time to meet the contract execution schedule. The advertisement should include the proposed Scope of Services.

Receive Letters of Response From Consultants. The PSU will receive the responses, eliminate non-responsive consultants from consideration and verify qualifications of responding firms.

Develop the Longlist. Developing the longlist of potential firms is the next step. All information available on each consultant firm should be considered carefully. If performance grades raise questions, it is wise to call FDOT Project Managers who have previously worked with the firms being reviewed. Fairly consider all firms, those that are known and those that are new to the TRC. The longlist should include a minimum of ten firms. If the number of qualified firms is less than ten, all should be listed.

Develop the Shortlist. The Selection Committee decides which firms to shortlist after considering the recommendations of the TRC. Although the Project Manager is not a part of the Selection Committee, he/she should be prepared to offer input and suggestions when asked.

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TRC members should prepare carefully for presentations and interviews.

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Notify Shortlisted Firms. Either the Project Manager or PSU personnel will call to notify firms selected for the shortlist. The shortlisted firms are then sent a Request for Proposal (RFP). The contents of the RFP are explained in Section 4, [**Procedure No. 375-030-002, Acquisition of Professional Services**](#). The RFP includes the proposed Scope of Services.

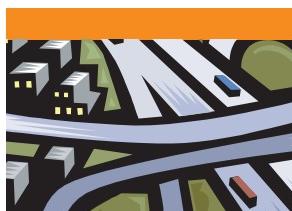
Hold Scope of Services Meeting. While a Scope of Services meeting with the shortlisted firms is optional, one should be held if the project is complex or scope issues exist. At the Scope meeting, the Project Manager explains FDOT expectations and the Scope of Services. Typically, few questions arise. An alternative is to hold the meeting only if it is requested by any of the shortlisted firms. A teleconference Scope of Services meeting is another alternative. This meeting format may save travel time and expense for both the FDOT and the consultants. After the scope of services meeting, a specified time is provided to allow consultants to ask questions. The procedure for submitting questions should be clearly established. Normally, technical questions should be directed in writing to the FDOT PM; contractual and submittal questions should be directed in writing to the PSU. All firms on the shortlist should receive the text of all questions and FDOT responses.

Receive Proposals From Consultants. Shortlisted firms submit their proposals, which may involve their making presentations and/or the FDOT conducting interviews. All members of the TRC **must** attend the presentation and interview meetings and complete evaluations for each firm. If members of the Selection Committee decide to attend one firm's presentation or participate in one firm's interview, they must be present for those of all other firms. The FDOT PM must take time to prepare for these meetings. She/He should review the consultant firm submittals carefully and prepare insightful questions. If written technical proposals are the basis for selection, the submittals should be reviewed completely and carefully. It is also wise to contact consultant client references to learn how they have evaluated the firm's performance.

Section 6, [**Procedure No. 375-030-002, Acquisition of Professional Services**](#), discusses the scoring form. The items to be scored and the weight attached to each item should reflect the criteria that are important in selecting the consultant firm for a specific project. The consultant's Project Manager is critical to the success of the project. The TRC should be concerned not only about his/her qualifications but also about his/her involvement in other projects and availability. It may be useful to learn how many other FDOT projects that individual is currently managing.

Conduct Technical Review of Consultants. After the selection method procedures have been completed, the TRC evaluates each consultant firm following the process outlined in Section 6, [**Procedure No. 375-030-002, Acquisition of Professional Services**](#). Committee members should concentrate on a firm's ability to do the work. They should not be distracted by other factors such as an attractive proposal or an artistic presentation. Although these attributes are impressive, they may not reveal the qualifications required. Gathering input from various disciplines and support offices can be beneficial in evaluating technical issues. Each TRC member should include a written explanation of her/his score that is well thought out and explains the rationale for the score. Although the scoring must be done individually, it is appropriate to discuss the consultants in general and reach some consensus on the major issues involved before scoring. The TRC chair should review results to ensure that they are reasonable and proper. Significant discrepancies in the scores of TRC members should be addressed in the selection package.

Rank the Shortlist. The selection package is prepared by the PSU for consideration by the Selection Committee, which decides the final ranking. The Project Manager should be prepared to answer any questions that the Selection Committee may have during this



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Consultants can schedule general presentations of their capabilities to district staff.

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process. The PSU then notifies the shortlisted firms of the final rankings, and negotiations may begin with the number-one ranked firm.

Marketing Professional Services to the Florida Department of Transportation

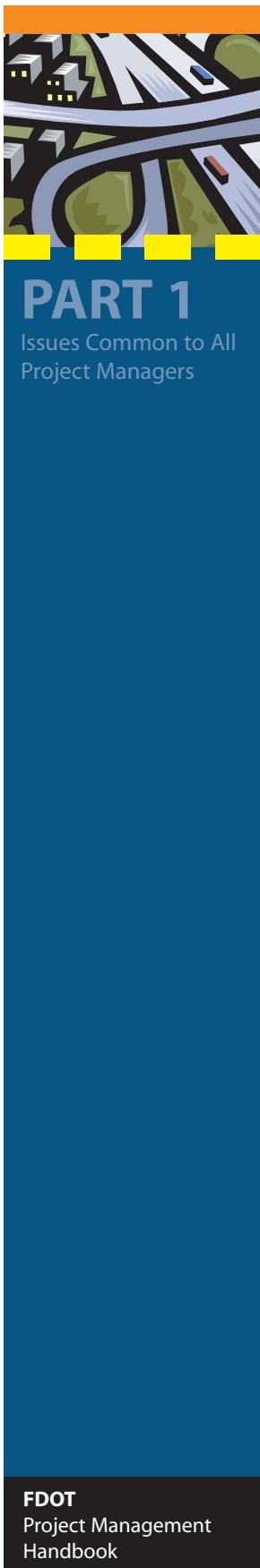
Consulting firms wishing to do business with the FDOT must understand the procedures for pre-qualification, selection and negotiations. All necessary information can be found at the Procurement Office [Professional Services](#) website. Districts schedule firms for presentation of their capabilities to key district staff on a regular basis. Firms should take advantage of this opportunity to market their skills to districts where they have not done business recently or when they have had significant changes in key project staff.

Consultant firms should recognize that there is usually much competition for projects. It is to the firm's advantage to research carefully FDOT planned projects (found at the Procurement Office website). Firms should be selective when deciding projects for which to submit Letters of Response. Only those projects that are within the capabilities of the firm should be pursued. Being selective is usually more effective than a "shotgun" approach. When a firm is shortlisted, it must avoid any contact with FDOT personnel concerning the project except as allowed in the RFP.

Contractual Services

Contractual services procedures are used for the procurement of any services that do not fall into the categories listed as professional services at the beginning of this chapter. They include environmental, archeological and appraisal services. Although appraisal contracts may be advertised under the professional services procedures, FDOT uses contractual services. Appraisers proposing on contracts to prepare surplus property appraisals and for contracts to prepare Local Agency Program (LAP) project appraisals must be qualified by FDOT under [Rule 14-75](#), Subsection 003.n of the F.A.C., Group 20, Appraisal Services.

The procedures for contractual services are covered in [**Procedure No. 375-040-020, Procurement of Commodities and Contractual Services**](#). Procurement of contractual services under this procedure can involve either an Invitation to Bid, a Request for Proposals or an Invitation to Negotiate, which is similar to the procurement of professional services. These contracts are procured through [MyFloridaMarketPlace](#), the state's eProcurement system, and are subject to a 1 percent transaction fee on all payments. There are important differences with contracts procured through Contractual Services that the Project Manager should understand. Each district has a Contractual Services Coordinator, who should be consulted early in the procurement process.



Internet References

Internet references cited in the chapter are linked directly in the text or can be found below.

- Section 287.055, Florida Statutes, The [Consultants' Competitive Negotiations Act](#) (CCNA)
 1. <http://www.flsenate.gov>
 2. *Statutes and Constitution*
 3. *View Statutes*
 4. *Title XIX*
 5. *Chapter 287*
- Procedure No. 375-030-002, [Acquisition of Professional Services](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 300*
 6. *Procedure No. 375-030-002*
- [Rule 14-75](#) of the Florida Administrative Code.
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Procurement Office*
 4. *Professional Services*
 5. *Chapter 14-75, FAC*
- [PD&E Standard Scopes.](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Project Management Office*
 4. *Standard Scope and Staff Hour Estimation for Design Services*
- [CEI Standard Scope](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Construction Office*
 4. *Specialized Area*
 5. *Consultant CEI*
- [Professional Services](#) website.
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Professional Services*
- Procedure No. 375-040-020, [Procurement of Commodities and Contractual Services](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*



- 5. *Series 300*
- 6. *Procedure No. 375-040-002*

- [MyFloridaMarketPlace](#)
 - 1. <http://www.dot.state.fl.us/>
 - 2. *Doing Business with FDOT*
 - 3. *Procurement Office*
 - 4. *Advertisements*
 - 5. *Vendor Bid System*

CHAPTER 11

Contract Negotiations

The discussion in this chapter will center on the contract negotiations process for professional services. However, many of the recommended techniques will apply to contracts negotiated under contractual services procurement as well. The principles of mutual gains can be applied to any negotiations.

The selection process discussed in Chapter 10 for professional services results in a short-list of no fewer than three firms, ranked. The first-ranked consultant is requested to provide an automated fee proposal. An independent staff hour estimate is prepared by the Department. Negotiations are then conducted to establish fair, competitive and reasonable prices for the services to be provided.

Both the Department Project Manager (PM) and the consultant firm Project Manager should always play a prominent role in the negotiations process including that of serving as lead negotiator, when appropriate. The PMs are responsible for the success of the project; and that success, in large part, depends on the scope of services and resources available. Both of these are determined in negotiations.

Prior to negotiations both consultant and Department Project Managers should review the primary references governing negotiations for consultant contracts with the FDOT:

- Section 287.005, Florida Statutes, the [Consultants' Competitive Negotiations Act](#) (CCNA).
- [Negotiation Handbook Professional Services](#)
- Section 8, [Procedure No. 375-030-002, Acquisition of Professional Services](#)
- [Procedure No. 375-030-020, Standard Scope and Staff Hour Estimation for Design Services](#)
- [Standard Scope and Staff Hour Estimation Handbook](#)
- [Automated Fee Proposal Guidelines](#)

The CCNA provides that the Department shall: "...negotiate a contract with the most qualified firm for services at a compensation that is fair, competitive and reasonable." It further provides that if such a contract cannot be negotiated with that firm, then negotiations shall be formally terminated. Negotiation shall then proceed with the next most qualified firm. If the Department is unable to reach agreement with the second-ranked firm, the process is repeated with the third-ranked firm. In summary, the Department must negotiate with firms in order of their rankings, one at a time, and cannot re-open negotiations with a firm once negotiations have been terminated.

Mutual Gains Negotiations

The Florida Department of Transportation (FDOT) conducts negotiations for professional services using the "mutual gains" approach, as taught by the Program on Negotiations in Cambridge, Massachusetts. The essence of this approach is based on the principles of negotiations originally set forth in the book ***Getting to Yes***, by Roger Fisher and William Ury. The term *Mutual Gains Negotiations* was carefully selected by the FDOT to reflect the underlying concepts of a negotiating method that increases the chances of arriving at a fair and reasonable price for professional services. It is not a strategy to "win" in negotia-

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INFORMATION

Elements of mutual gains negotiations:

1. Interests
2. Options
3. Criteria
4. Alternatives
5. Relationships

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tions, nor is it a "win-win" approach. The mutual gains approach is designed to take the game-playing out of negotiations. It recognizes that both parties have interests that must be satisfied if there is to be a successful outcome; therefore, both parties should work collectively to realize those interests. However, it also emphasizes negotiating hard for legitimate interests and exercising alternatives when those interests cannot be achieved; thus everyone will not always "win."

The negotiations process is serious business. On one hand, it determines business success, which affects the livelihood of individuals. On the other hand, public agencies have a legal and moral obligation to safeguard the taxpayers' hard-earned money. They must ensure that all expenditures result in a reasonable value for the public. Negotiations, therefore, should not be treated as a game where one side wins as much as possible without regard to the interests of the other side.

There are five elements to the mutual gains approach to negotiations: interests, options, criteria, alternatives and relationships. Each is discussed below and useful procedures for the negotiator are recommended.

Interests—Know What Is Important. The first step in the process of mutual gains is to identify your interests and to anticipate the interests of the other side. There is a difference between an "interest" and a "position." Examples of positions are salary caps or a minimum number of staff hours. An interest is the reason for a position. Interests are not always obvious, so careful analysis is necessary in the pre-negotiation stage. For example, the interests of a consulting firm may be exposure to a new client and maintenance of staff levels as well as profitability. The Department's interests might include: quality of work and schedule as well as budget. Know your interests and negotiate hard for them. Understand that positions are simply means to an end and that there may be many positions that can satisfy an interest.

Options—Be Creative. Once you understand your own interests and have anticipated the other side's interests, determine where the two sides are likely to agree and where there is likely to be disagreement. Brainstorm options when interests are likely to clash. Many bottom-line dollar issues can be resolved by preparing creative options for issues such as the scope of services, schedule and method of payment. During negotiations, be forthcoming with your interests and try to get the other side to do likewise. Do not get hung up on positions. Seek to understand the interests behind positions and convince the other side that there may be more than one way to satisfy its interests. Try collective brainstorming, with both sides working to satisfy both sets of interests. This process is the essence of mutual gains negotiations.

Criteria—Be Prepared. There is a wealth of legitimate criteria available to help overcome roadblocks in negotiations. The Department has extensive data on salary rates, overhead rates, direct expenses and staff hour estimating. It is in the interest of both parties to review the available data carefully and to use it in negotiations as a beginning point for agreement. Remember that other criteria may be useful also such as a firm's own experience or industry averages.

Alternatives—Protect Interests. Each side should have a good idea of what its Best Alternative to a Negotiated Agreement (BATNA) is. A strong BATNA is real power in negotiations. For example, assume you are buying a car. Once you have done thorough research, know the worth of the car you want and have a price from another dealer, you have all the power in negotiations. If you cannot reach a deal, you have a good alternative. Your BATNA will determine your walk-away position. Neither consulting firms nor the FDOT should be forced into poor business deals as a result of negotiations. While the

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Fee proposals must
be accurate,
complete and
timely.

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mutual gains approach to negotiations does not advocate that either party walk away from negotiations, that option should be carefully evaluated and exercised when necessary. Otherwise, one party may hold unfair power over the other. Because this element of mutual gains negotiations is available, there must be no stigma attached if a firm chooses to exercise its BATNA.

Relationships—Work Together. Remember that negotiations are only the beginning of an important relationship. Once a deal is struck and a project completed successfully, future projects may result for the consulting firm involved. Long-term relationships are equally important to consulting firms and to the Department; it is important that negotiations do not damage those relationships. It requires professional skill to negotiate hard for your interests while maintaining positive relationships. It requires excellent communications and going the extra mile to view the issues from the perspective of the other side. Remember, each side enters negotiations with certain preconceptions about the other side. Some are accurate and some may be inaccurate. Carefully evaluate your own preconceptions, and be willing to alter them if they prove to be false. Understand that the other side has preconceptions about you, and they may or may not be correct.

Many use negotiation techniques that are really nothing but game-playing. Such techniques, in the long run, will damage relationships. Remember, "winning" does not require that the other side "lose." Be open and honest and avoid playing games. The PM must approach negotiations with the attitude that both sides have a right to fulfill their interests. Work as hard to satisfy the other side's interests as you do to satisfy your own.

Ultimately a relationship of trust and respect is established by being clear and honest with the other party, not by giving in. Be honest about what you cannot do. You should not sacrifice an important interest for the sake of maintaining a relationship. Being cooperative does not mean giving up your interests or settling for an agreement that is not as good as your BATNA.

Initial Submittal by the Consultant

The top-ranked consultant will receive instructions for the submittal of comments on the scope of services, a detailed staff hour estimate (where appropriate), a fee proposal and an audit package that supports the fee proposal. The FDOT requires automated fee proposals for most consulting contracts. The [Automated Fee Proposal Guidelines](#) should be used in the preparation of fee proposals. When negotiations are completed, the updated automated fee proposal will be uploaded into the Consultant Invoice Transmittal System to establish the contract file for payment.

The firm should ensure that the scope of services is clearly understood before preparing the fee proposal. The proposal should include proposed changes to the scope, if appropriate. The staff hour estimate should follow the [Standard Scope and Staff Hour Estimation Handbook](#) recommendations whenever possible. But it must be recognized that not all professional services are covered in this document. When the standard estimating forms are used, directions should be followed exactly.

An accurate, complete and timely fee proposal must be prepared. The fee proposal should be clear and contain explanations and sufficient back-up information so that a reviewer can easily determine how the price was developed. Data in this package will be used as the basis for much of the subsequent negotiations. It is therefore to the benefit of the consultant to submit a quality package that will make a positive impression on the FDOT negotiations team. Instructions are explicit as to what is required, and they should

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Know what is
negotiable!

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be followed carefully. The consultant should ensure that everything requested in the instructions is submitted including any required documentation. The CCNA requires consultants to submit a truth-in-negotiations certification stating that all wage rates and other unit costs supporting the fee proposal are accurate, complete and current at the time of contracting. Failure to comply with this requirement will result in an adjustment of contract fees and may also result in suspension of the consultant's qualifications. If there are questions, the consultant should address them as instructed in the notification package in sufficient time to meet the deadline for submission of the package.

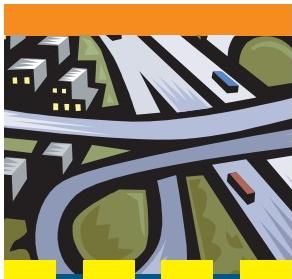
Preparations for Negotiations

Both sides should prepare properly for negotiations. The more thorough the preparation, the more quickly an agreement can be reached and work can begin. A good rule of thumb is: Spend as much time preparing for negotiations as you expect to spend in the negotiations process.

Know What Is Negotiable. The first step in preparations is to clearly understand what is "on the table." The following contract elements may be negotiable:

- **Scope of Services.** Both parties must agree to the scope. Even though a standard scope of services is used, the provisions of that scope are negotiable. The consultant may have proposed an innovative approach that should be considered, or the FDOT may have some special concerns. Both Project Managers must understand the scope and be prepared to clarify it as necessary in negotiations. A field visit with key FDOT and consultant staff prior to beginning negotiations will prove helpful in reaching a common understanding of project issues and requirements.
- **Work Effort.** The FDOT Project Manager should prepare an independent staff hour estimate of the project prior to negotiations for use in evaluating the consultant's estimate. This estimate should be prepared in consultation with appropriate support offices such as surveying and mapping, materials, or structures. A good check on staff hour estimates is to compare them with those of similar projects taking into account differences in complexity and other factors. The objective of mutual gains negotiations is to avoid game-playing. Deliberately estimating high or low, whether it be the FDOT or the consultant, does not achieve this important goal of the mutual gains theory.
- **Distribution of Staff Hours.** Not only are the total staff hours important, so is the distribution of staff hours. For instance, it is necessary to have sufficient hours of key staff in the project, but it is not appropriate to overload the hours with highly paid senior staff. Another point to remember is that while very experienced staff may receive higher wages, they should be more productive and, consequently, work fewer hours.
- **Staffing.** Addition to or elimination of selected staff members from the nominated team is a negotiable issue. However, the nominated team plays a large part in selection. Location of staff may also be an issue, and is negotiable.
- **Cost of Services and Rates.** Both Project Managers should review the *Negotiation Handbook Professional Services* and understand the parameters of negotiating salaries, salary escalation, direct expenses and operating margin. Audited overhead rates are not negotiable, although the consultant may opt to use a lower rate as a negotiating point.

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Use the elements of mutual gains to prepare for negotiations.

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- **Subcontract Costs.** Subcontracts can be a significant cost factor in a contract. The costs of subconsultant services and associated rates are negotiable for subconsultants, as they are for the prime consultant. Subconsultant costs must be carefully prepared and reviewed prior to negotiations.
- **Schedule.** The schedule may have a direct impact on the price of the project. Both Project Managers should review the schedule carefully and be prepared to offer refinements, as appropriate.
- **Method of Compensation.** Section 6 of the *Negotiation Handbook Professional Services* lists four methods of reimbursement commonly used by the FDOT.
 1. Lump sum
 2. Cost reimbursement
 3. Cost per unit of work
 4. Specific rates of compensation

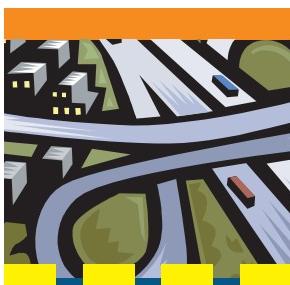
Chapter 12 of this handbook discusses each of these payment methods. The Department's preferred method of compensation should be stated in the Request for Proposals. The final method of compensation should be agreed to during the negotiations process.

In evaluating what is negotiable, the project concept, as advertised, cannot be altered. Care should be taken not to alter contract elements to the extent that the selection process may be questioned.

Prepare Using a Mutual Gains Approach. The steps for preparing to engage in mutual gains negotiations are summarized below:

- **Evaluate Interests.** Each Project Manager should list the key interests for the project. Some must be satisfied to reach an agreement; others may be desirable, but not essential. Be honest with yourself, and make sure only significant interests are listed. Once your interests are identified, place yourself in the position of the other side and list their likely interests using the same process. Then, recognize that other parties who may not be directly involved in the negotiations may have legitimate interests in the outcome. These parties should be consulted prior to negotiations to determine their interests.
- **Identify Options.** This process begins by reviewing your interests and the anticipated interests of the other side. Those interests that are in agreement need not be negotiated since there is agreement. Where there is likely to be disagreement, prepare options to present in the negotiations. Brainstorm options with your team. Be creative; look at all negotiable elements discussed above. For example, if there is likely to be an impasse on staff hours, will changes in the scope or schedule overcome the problem? Have options available before negotiations begin.
- **Know Your BATNA and Bottom Line.** Evaluate all consequences of not reaching an agreement. For the FDOT, it will mean delay because it will be necessary to go through the negotiating process with the second-place firm. Anticipate this alternative by learning about the number-two ranked firm. Audited overhead and expense rates are available for all qualified consultants, and salary rates can be determined from recent FDOT contracts. It is, however, inappropriate to have any discussions with the second-place firm until negotiations are officially terminated with the first-place firm.

CHAPTER 11 - Contract Negotiations



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Good communication is essential to negotiations.

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For the consultant, the loss of business should be evaluated against the current backlog of work and other potential contracts. Any potential ill will that may be generated with the FDOT should be factored into the consideration.

A thorough analysis of your BATNA allows you to determine your walk-away position. What interests and bottom-line price must be achieved in the negotiations for an agreement? Deliberately formulate an answer to this question before negotiations. Making a walk-away decision in the heat of negotiations is usually a mistake.

It is not the intent of mutual gains negotiations to encourage terminated negotiations; rather it is to ensure that both parties reach well-thought-out business decisions. While everyone wants negotiations to be successful, there is a point where an agreement cannot be achieved. Know that point before beginning negotiations.

Learn About the Other Side. Both Project Managers should learn as much as possible about the other side prior to beginning negotiations. The FDOT PM should read submitted material carefully, visit the firm's website, obtain and read its brochures and newsletters, and talk to others in the Department who have worked with the firm and its nominated Project Manager. The consultant PM should learn about the district, the office involved and the FDOT Project Manager who will be assigned to the project. He/She should become familiar with the PSU staff and learn the negotiating philosophy of the district he/she will be dealing with. The consultant PM must know the FDOT's policies about any issues likely to come up in negotiations.

Conducting Negotiations

Once a negotiation strategy has been determined and preparations have been made, the negotiation process itself can begin. Some suggestions for conducting successful negotiations follow.

Select Negotiators. The negotiators for both sides should be introduced and their relative roles made clear to all. Negotiators should have the authority from their organization to make decisions. Going back to the boss to get authority for a decision only delays the process, and it may be seen as a delaying tactic. The selected negotiators should participate throughout the process. FDOT negotiators sometimes tend to compartmentalize negotiations; that is, one group negotiates rates, one staff hours, and so on. Some districts operate in teams and rely heavily on the PSU staff for information on contractual issues. It may be appropriate to bring in specialists at key points in the process. Good decisions are best made, however, when one person leads the entire process and has authority to revisit previously negotiated elements if necessary, before a final agreement is reached.

Start Right. One of the first steps during actual negotiations is to agree on how the negotiations are going to be conducted and to establish a deadline for an agreement. Take time at the beginning to get to know the individuals on the other side and to establish a degree of familiarity and trust. Work to foster cooperation and rapport. Do not try to use negotiation strategies to give yourself some sort of psychological advantage. This behavior will be viewed as game-playing and unprofessional. If the other side attempts such tactics, clearly explain that you will not negotiate in such circumstances.

Communicate. Communication is essential to successful negotiations. A key communication skill in negotiating is listening. Earnestly try to understand the other side's viewpoint. Criticizing the other side is a sure way to shut down communications. Do not be

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Document all
agreements made
during
negotiations.

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secretive during negotiations. Be willing to share appropriate information and useful data. Good communication does not mean agreeing with the other side. Mean what you say, and don't equivocate with bad news. Be direct and honest. Always maintain a professional approach. Negotiations can be stressful, but you should minimize your emotional reactions and be understanding of emotional reactions from others. Stay calm, and separate people issues from substantive issues.

Apply a Mutual Gains Strategy. Become skilled in the use of mutual-gains techniques previously discussed. Throughout the process, both parties should be open to reasoned arguments. A "take it or leave it" position from the outset is not negotiations and may be a violation of CCNA. Both parties should negotiate in good faith. The end result of the mutual gains negotiating technique is to obtain a fair price for both the FDOT and the consultant. Throughout negotiations therefore, keep in mind that agreement on a bottom line price is the objective, not the mechanics of reaching it.

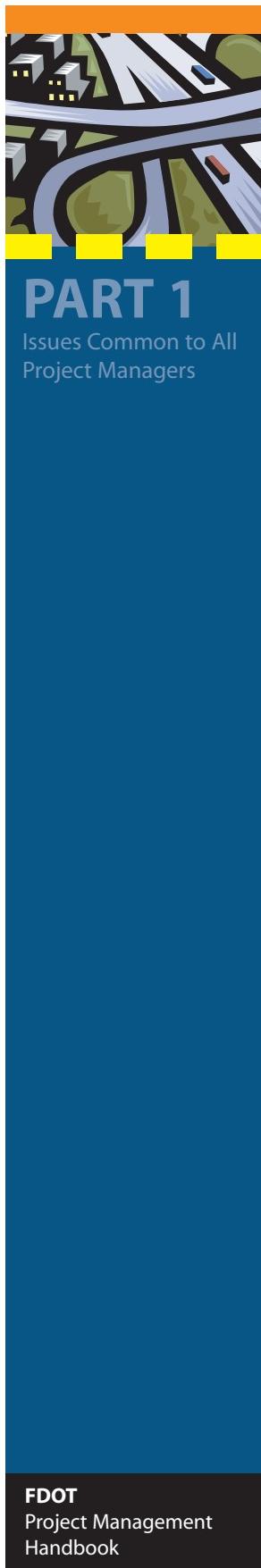
Document Negotiations. There will be many agreements and understandings reached during the process of negotiations. When appropriate, the contract or scope of services should be revised to reflect these agreements. However, there will also be many minor issues discussed that may not warrant revisions in the contract but are important to document. The comments column in the standard staff hour estimating forms can be used to document understandings reached for levels-of-effort issues. Other understandings can be documented with negotiations reports, letters or memoranda to file. The PSU staff should be consulted if the appropriate method of documentation is not clear.

Regardless of the method used, some sort of documentation is useful. As work on a project proceeds, issues may arise that were discussed during contract negotiations, or work may be added or deleted. Good documentation of the negotiations can avoid confusion during the project. And, when organizations change staff or a new Project Manager takes over before a project is completed, the "gentleman's agreements" reached in contract negotiations may be lost unless they have been properly documented.

Internet References

Internet references cited in the chapter are linked directly in the text or can be found below.

- Chapter 287.055, Florida Statutes, The [Consultants, Competitive Negotiations Act](#)
 1. <http://www.flsenate.gov>
 2. *Statutes and Constitution*
 3. *View Statutes*
 4. *Title XIX*
 5. *Chapter 287*
- The [Negotiation Handbook Professional Services](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Professional Services*
 4. *The Negotiations Handbook*
- Procedure No. 375-030-002, [Acquisition of Professional Services](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policies, Procedures, Forms and Manuals*



4. *Procedures by Number*
 5. *Series 300*
 6. *Procedure No. 375-030-002*
- *Standard Scope and Staff Hour Estimation Handbook*
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Project Management Office*
 4. *Standard Scope and Staff Hour Estimation for Design Services*
 - *Automated Fee Proposal Guidelines*
 1. <http://www.dot.state.fl.us/>
 5. *Doing Business with the DOT*
 2. *Procurement Office*
 3. *Professional Services - Forms*
 4. *Automated Fee Schedule User's Guide*

Other references:

- Fisher, Roger, Ury, William and Patton, Bruce, ***Getting to Yes, Negotiating Agreement Without Giving In***, Penguin Books



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 Both PMs must know the "boiler plate" and the scope of services.

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CHAPTER 12

Consultant Contract Management

Once contract negotiations are completed, the contract is executed and the Notice to Proceed has been issued, work can begin. Both the Florida Department of Transportation (FDOT) and the consultant Project Manager (PM) will be eager to perform the technical work. It is also important that both have a clear understanding of how to manage the contract as well as the technical work. The consultant has a responsibility to perform under the terms of the agreement and the FDOT PM has a responsibility to reasonably and objectively evaluate the consultant's performance.

Florida law requires that a written agreement be executed and funds encumbered prior to services being rendered. Both PMs need to be aware of this requirement and not allow work to begin early. Work performed before the contract is executed and funds are encumbered cannot be paid for under the contract. Some preliminary engineering services related to reimbursement utility work may not require prior encumbrance. The FDOT PM should check with the District Utility Coordinator concerning this type of work.

Elements of the Contract

Both Project Managers must know the contract. They must understand the "boiler-plate" as well as the scope of services. The standard format for professional contracts includes a standard contract document that specifies the terms of the agreement as well as the legal responsibilities and rights of both parties, an Exhibit A that describes the scope of services, and an Exhibit B that describes the method of compensation.

Professional Services Agreement. This document is the actual agreement that is signed by both parties. It includes the contract number, the financial identification number, the date of the agreement, the consultant, the title of the project, the term (duration) of the contract and the schedule of services, insurance requirements, a list of subcontractors, and references to the contract terms, scope of services and method of compensation.

Standard Terms. The FDOT uses [Standard Professional Services Agreement Terms](#) ("boiler plate"). Boiler plate normally includes the following:

- **Services and Performance.** Specifies procedures for changes, revisions and supplemental agreements; standards of care; use of computer facilities; and use and ownership of documents produced by the project.
- **Term.** Details information about application of the schedule, extending the duration and delays.
- **Compensation.** Details information concerning accounting, record keeping, invoicing, the accuracy of wage rates and other unit costs and the availability of budgeted funds.
- **Indemnity and Insurance.** Specifies indemnification, claims and insurance requirements.
- **Compliance with Laws.** Cites requirements for complying with specific state and federal statutes that pertain to such issues as professional licensing rules and laws, public access to documents, press releases and public statements by the consultant, employment of unauthorized aliens, and discrimination.

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The method of compensation is important to contract management.

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- **Termination and Default.** Specifies actions that may be taken by the Department concerning termination of the contract and default of the consultant.
- **Assignment and Subcontractors.** Details responsibilities concerning assignment and subcontracts.
- **Miscellaneous.** Outlines interpretation and legal jurisdiction clauses.
- **Terms for Federal-Aid Contracts.** Cites specific requirements and certifications that apply when the contract is federally funded.

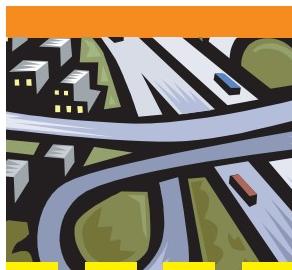
Scope of Services. The scope of services is the specific work requirements for the consultant. Chapter 10 lists specific information that should be included in a scope of services. Both Project Managers are responsible for managing the scope.

Method of Compensation. This section includes the compensation amount and method, invoicing procedures, and final audit and closeout requirements. The methods of compensation normally used are discussed in detail in the [Negotiation Handbook Professional Services Contracts](#). Methods of compensation include:

- **Lump Sum.** With a lump sum contract, the consultant agrees to complete the scope of services for a specific amount. Invoices are for a percent complete by task, deliverables or other milestones. It is particularly important to control scope creep on lump-sum projects. Legitimate scope changes should be added by modification, with negotiated revisions in the lump sum price.
- **Cost Reimbursement.** This method is also known as "cost plus fixed fee." The actual (or negotiated) rates for wages applied to the actual hours expended, plus overhead, Facilities Capital Cost of Money (FCCM) (if applicable), operating margin and direct expenses are reimbursed. The operating margin, the "fixed fee," is negotiated as a lump sum, based on a percentage of the estimated direct salary cost. As with all contracts, the consultant must maintain accurate time records and ensure that the rates used are as agreed to in the contract. The negotiated contract should specify how labor rates should be invoiced; that is, actual rates or the negotiated average for the labor category. A limiting amount may be established for the overall contract or individual tasks, projects or cost elements. A cost reimbursement contract gives the FDOT Project Manager a means to more carefully monitor the level of involvement of the consultant's key staff members.

This method is used primarily when the scope and required level of effort is unclear at the time of contract negotiation. If the work is completed under the limiting amount, the consultant is reimbursed only for the time and direct expenses expended, plus the fixed fee. Once the limiting amount is reached, the consultant is obligated to continue until all terms of the contract have been fulfilled. Additional compensation is available only if there is a change in the scope of services. The consultant Project Manager should monitor the remaining balance on his/her contract carefully and inform the FDOT Project Manager when the total expenditures approach the limiting amount. This type of contract requires intensive contract management from both Project Managers.

- **Unit Cost.** Unit cost is a fixed rate of reimbursement for each unit of work completed. This method is used for services such as geotechnical services or



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Two types of contracts used by FDOT are project-specific and task work order.

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traffic counts. Invoices are based on the number of units completed. Normally, a limiting amount is established based on an estimated number of units.

- **Specific Rates of Compensation.** In this method, a billing rate is negotiated that commonly includes: labor, overhead, facilities capital cost of money (FCCM) (if applicable), and operating margin. Direct expenses can be included in the billing rate, but sometimes they are paid separately at actual costs. These contracts are invoiced for actual hours expended in the same manner as cost reimbursement. The difference is that all individual cost items are included in the negotiated rate.

Types of Contracts

Two basic types of contracts commonly used by the FDOT are:

Project-Specific Contracts. Many consultant contracts are to complete a specific work phase of one or more projects. Project-specific contracts can contain options for services that may be needed but not funded at the time of the contract. Frequently optional services are not negotiated until the decision is made to exercise the option. Commonly used options are design services for project development and environment (PD&E) contracts and post design construction services for design contracts. If the scope and level of service for tasks are difficult to foresee at the beginning of long-term contracts, it may be appropriate to make them options to be negotiated at a later date. An example would be a long and complex PD&E project, where some of the public participation, public hearings, analysis of alternatives and final environmental reporting are options to be negotiated once there is a better grasp of the project requirements.

Task Work Order Contracts. The FDOT frequently must accomplish relatively small projects or tasks for which it would be inefficient to advertise and go through the consultant selection process individually. Task assignment contracts are designed to select a qualified consultant to perform projects or tasks of a similar nature for a period of time or until a budgeted contract amount is exhausted. The actual tasks to be performed are usually not identified at the time of consultant selection and contract negotiation. The consultant is selected based on qualifications, staff and capability to perform the tasks. Negotiations establish the rates to be applied to individual assignments.

Once the contract is executed, individual task work orders are negotiated as needs arise. Depending on the structure of the base contract, task orders may be lump sum, cost reimbursement or unit cost. Scopes of services for individual task orders should contain all the basic information recommended for a scope in Chapter 10 of this handbook. The level of detail can be abbreviated as long as it is clear to both the consultant and the FDOT PMs. FDOT Project Managers should review Section 2, [**Procedure No. 375-030-010, Amendments and Task Orders for Professional Service Agreements**](#) for specific instructions on the preparation of Task Work Orders.

Both PMs must understand the differences between task work order contracts and those for specific projects. When task work-order-contracts involve a large number of relatively small task assignments, their management can become a challenge. Each PM must have a systematic process for ensuring that deliverables, contract funds, invoicing procedures and schedules are all properly controlled. The schedule of task assignment contracts should be managed so that the overall contract term does not expire prior to completing an individual task assignment.

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The monthly progress report and the invoice submittals should be coordinated.

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Invoicing

Consultant Project Manager. Consultant PMs must ensure that invoices are accurate and that the services were rendered within the terms of the agreement. Invoices must be fully supportable. The supporting documentation must agree with the requested billing period.

The consultant must understand the invoicing requirements for the contract. Most professional services contracts are now invoiced through the Consultant Invoice Transmittal System (CITS). For projects in CITS, the consultant Project Manager should study the CITS instructions prior to submitting the first invoice. The [CITS Training Manual](#) and information on how to request access can be found on the Professional Services website. It is also important for the FDOT PM to work with the Professional Services Unit (PSU) personnel to ensure that the contract data is properly loaded into the system.

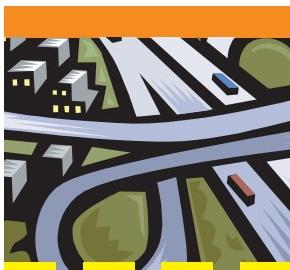
The consultant Project Manager should appreciate the fact that the FDOT Project Manager has a time limit to review and act on an invoice submitted through CITS. CITS does not automatically notify the FDOT PM that an invoice has been submitted, but it does prompt the consultant to e-mail the FDOT PM and opens a browser with a prepared message. The consultant should take advantage of this feature. Submittal of a monthly progress report should be coordinated with the invoice submittal since that report frequently provides the necessary back-up information needed to approve an invoice. A good procedure is to send the FDOT PM an e-mail notifying him/her that an invoice has been submitted and attach an electronic copy of the monthly progress report. If the FDOT PM will not be available to act on an invoice, a back-up reviewer should be designated; or the consultant should be notified not to submit an invoice until the FDOT Project Manager is available.

Projects that are not under CITS require a "hard copy" transmittal, which requires more time to prepare and process. A [sample invoice form](#) is available on the Procurement Office website. The invoice format and supporting data should be agreed upon prior to submission of the first invoice.

Consultants should invoice on a timely and routine basis. It is not appropriate to delay invoices at the end of the year because of tax concerns. Lump sum contract invoices should be based on completion of project milestones, not hours or labor dollars expended. Invoices for task assignment contracts should be submitted on a regular basis (for example monthly). To reduce workload for the FDOT, one invoice should be submitted that includes all task work order charges for the billing period. Multiple invoices for each work order task generally should not be submitted. However, if a question that may delay approval of a particular task is anticipated, invoicing that task separately may be justified so that the full invoice is not delayed.

FDOT Project Manager. Project Managers must review invoices to ensure that costs are reasonable, allowable and necessary. A cost is **reasonable** if, in its nature or amount, the cost does not exceed that which would be incurred by a prudent business person in the conduct of a competitive business. A cost is **allowable** if it is expressly provided in regulatory or contractual provisions. The Department may refuse to allow costs incurred by contractors that are unreasonable in amount or contrary to public policy. A cost is **necessary** if it is required to meet the terms of the contract.

The FDOT PM, when reviewing invoices related to the work of subconsultants (such as surveying and mapping and geotechnical work) should consult appropriate support services to see if their personnel are familiar with the work that has been accomplished. Provided



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Performance grading is an important contract management tool.

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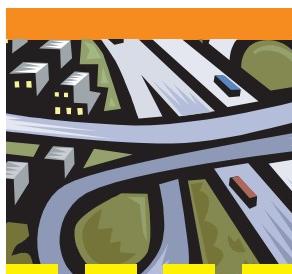
the contract allows it, the FDOT PM should withhold payment of a portion of an invoice for poor quality work if justified. Approving invoices results in the direct expenditure of state funds. The FDOT PM must be assured that services were provided, that the payment is in accordance with the contract and that the invoice is properly documented.

Performance Grades

Performance grades are very important to consultants because they are a large factor in the selection for more work with the Department. Perhaps more importantly, performance grades are an excellent quality assurance tool for the consultant. For the FDOT Project Manager, performance grades are a valuable project management tool.

Procedure No. 375-030-007, *Project and Performance management Professional Services Consultant Work Performance Evaluation* contains specific instructions on grading consultant performance. The following are some guidelines to remember when preparing performance grades:

- Fairness and consistency in grading is necessary. Inflated grades are misleading to FDOT personnel and to the consultant.
- Performance grade expectations should be discussed with the consultant at the beginning of a project so that the level of performance associated with grades is clear to both parties. Grading standards and expectations differ, so both parties should agree on what is considered "poor," "good," and so forth.
- All performance grades must be timely. Late grade submission reflects poorly on the FDOT PM, are often inaccurate due to time and memory lapses and do not provide useful selection information for other FDOT PMs.
- Interim grades are very useful. Interim grades must be submitted at least every 12 months, but the FDOT PM may submit interim grades more frequently.
- Discuss performance with the consultant throughout the project so that there are no surprises when grades are submitted. Discuss grades with the consultant before submittal and fairly consider any information provided by the consultant. It is appropriate to give the consultant time to correct a problem before submitting a poor grade, so begin the process early.
- If a low grade is submitted, the reasons for the grade should be documented in the event of a protest.
- If an interim grade is submitted to correct a performance problem, revise the grade appropriately as soon as the problem is corrected.
- It may be helpful to talk with PSU personnel or possibly a more experienced Project Manager before submitting grades if you are not comfortable with the grades.
- Subconsultants may also be graded. The Project Manager should consult the appropriate support services to get input for the grades of subconsultants. Also, it may be appropriate to obtain the input of the prime consultant when preparing subconsultant grades.



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 Supplemental agreement approval is an involved process.

 Both PMs must stay focused on the scope.

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Contract Amendments

Paragraph 1, [**Procedure No. 375-030-010, Amendments and Task Orders for Professional Service Agreements**](#), contains specific requirements concerning contract amendments.

There are two types of contract amendments—supplemental amendments and other amendments.

Supplemental Amendments. Supplemental amendments are used to modify an original agreement condition where there is a corresponding change in the total compensation. A change in the scope of services requiring additional compensation must be within the original intent and purpose of the contract. A supplemental amendment will require a request for a proposal, proposal review, negotiations, an amendment request, pre-award review, preparation and execution. A supplemental amendment is a time-consuming process, so the need should be identified early and carefully coordinated with PSU personnel. The FDOT Project Manager must be completely familiar with this procedure and ensure that all necessary documentation is in place before beginning the process. If the supplemental amendment is requested by the consultant, the consultant Project Manager should help by providing all appropriate documentation. No work associated with a supplemental amendment can begin until the agreement is fully executed.

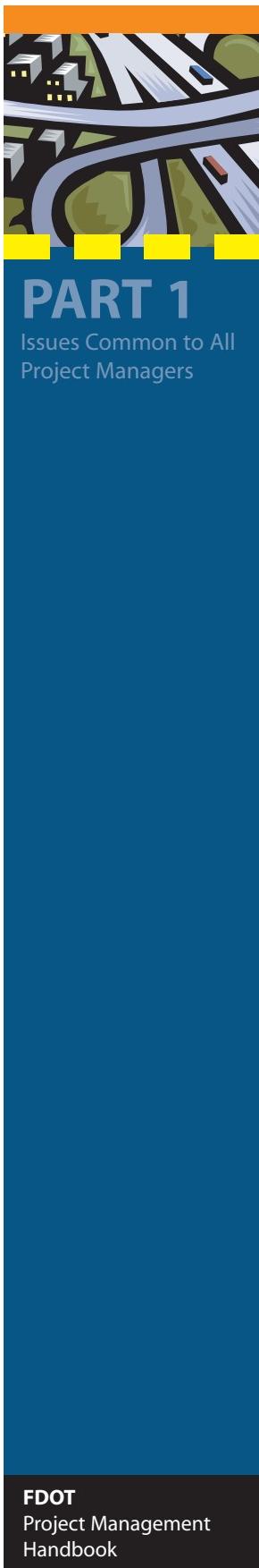
Other Amendments. Other amendments can be used for changes that do not affect total cost such as time extensions, assignment agreements, minor changes in the scope and other modifications to the agreement terms.

Managing Scope Creep

The consultant has a contractual obligation to provide all the services required in the scope, but only those services. It is not appropriate for the FDOT Project Manager to request additional services (scope creep). This practice either unfairly affects the consultant's profitability or it exposes the Department to the risk of additional costs. The consultant Project Manager must identify scope creep early and bring it to the attention of the FDOT Project Manager. He/She should recognize that scope creep can also originate from within the consultant team. It is important for both PMs and all team members to stay focused on the scope. Both Project Managers should know when and how to say "no" when necessary. If both the FDOT and the consultant PMs agree that additional work is necessary, then the contract amendment process discussed above should be used.

FDOT- Consultant Relationships

Both the FDOT and the consultant Project Manager must work to develop a professional relationship that will foster project success. It should not be an adversarial relationship. Both parties are on the same team, and each is necessary for the other's success. Mutual respect and good communications are usually the keys to a successful relationship. Both parties will begin a project with certain expectations, which are probably not specifically addressed in the contract. Both should be open with expectations of each other early in the project. Chapter 1 of this handbook discusses ethical considerations when dealing with a consultant and Chapter 6 discusses the roles and responsibilities of both FDOT and consultant Project Managers.



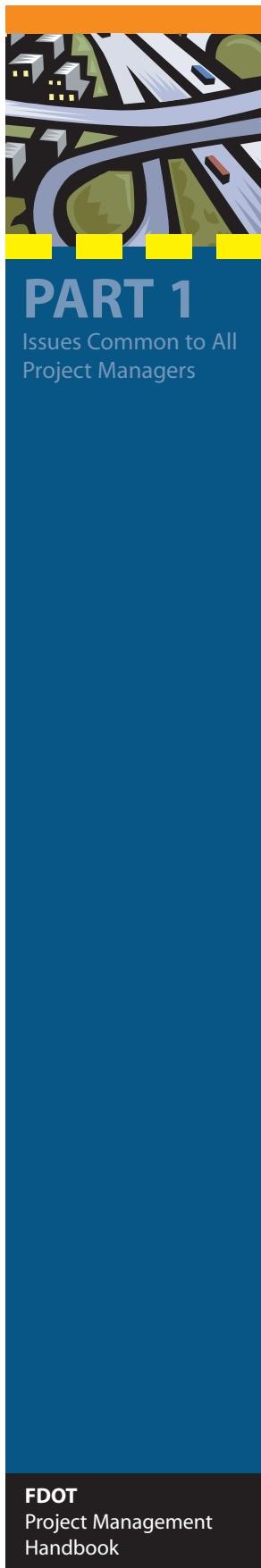
Where to Go for Help

The FDOT Project Manager should consult the district professional services staff if any contractual question or issue arises. Most consultant firms do not employ full-time contract specialists. Consultant firms should feel free to consult with the PSU that services their contract to assist with contractual questions or issues.

Internet References

Internet references cited in this chapter are linked directly in the text or can be found below.

- [Negotiation Handbook Professional Services Contracts](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Procurement Office*
 4. *New Negotiations Handbook*
- Procedure No. 375-030-010, [Amendments and Task Orders for Professional Service Agreements](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *300 Series*
 6. *Procedure No. 375-030-010*
- [CITS Training Manual](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Professional Services*
 4. *CITS Training*
- Procedure No. 375-030-007, [Project and Performance Management Professional Services Consultant Work Performance Evaluation](#)
 1. <http://www.dot.state.fl.us/>
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 5. *300 Series*
 6. *Procedure No. 375-030-007*



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CHAPTER 13

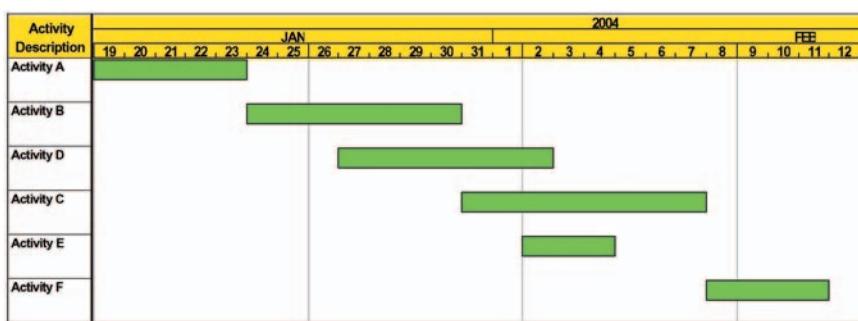
Scheduling

The purpose of this chapter is to provide background in the preparation and effective use of scheduling as a tool for project management, recognizing that practices related to scheduling may vary by district. Many districts have detailed scheduling guidelines that the Project Manager should refer to before developing a schedule. This chapter focuses on the basics of the *Critical Path Method* (CPM) of scheduling, a "Scheduling 101." The chapter also addresses the benefits of a schedule, how to build and use a schedule, some techniques for managing the schedule, some examples of effective reports, and finally, how to identify and correct common schedule problems. Scheduling is a necessary skill for project management. At the end of this chapter is a list of useful references for more detailed information on scheduling techniques. Although much of the scheduling literature is related to construction scheduling, the same techniques apply to any project phase, whether it be planning, project development and engineering (PD&E), design or maintenance.

The Basics of Scheduling

A simple bar chart showing the start and finish dates of project activities is known as a *Gantt chart*. The basic difference between a Gantt chart and a CPM schedule is that the CPM contains relationships between activities and allows date constraints to be placed on individual activities. Thus for small or simple projects where activities are consecutive or connected end-to-end, a Gantt chart may be adequate. However, as projects become more complicated, activities will occur concurrently and complex relationships will develop. In these cases, a CPM schedule may prove to be more effective and provide more benefits, some of which are delineated in the next section. A Gantt chart and CPM schedule are illustrated in Figures 13-1 and 13-2.

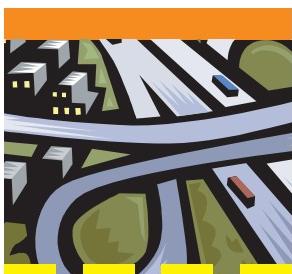
Figure 13-1 Sample Gantt Chart



Before explaining the nuts and bolts of the CPM, it is important to point out that:

- The schedule is a *tool* for project management. Too often schedule production becomes an end in itself.
- Although professional schedulers are something necessary for complex projects, the product must be *simple* enough to be understood and managed by the Project Manager.

CHAPTER 13 - Scheduling

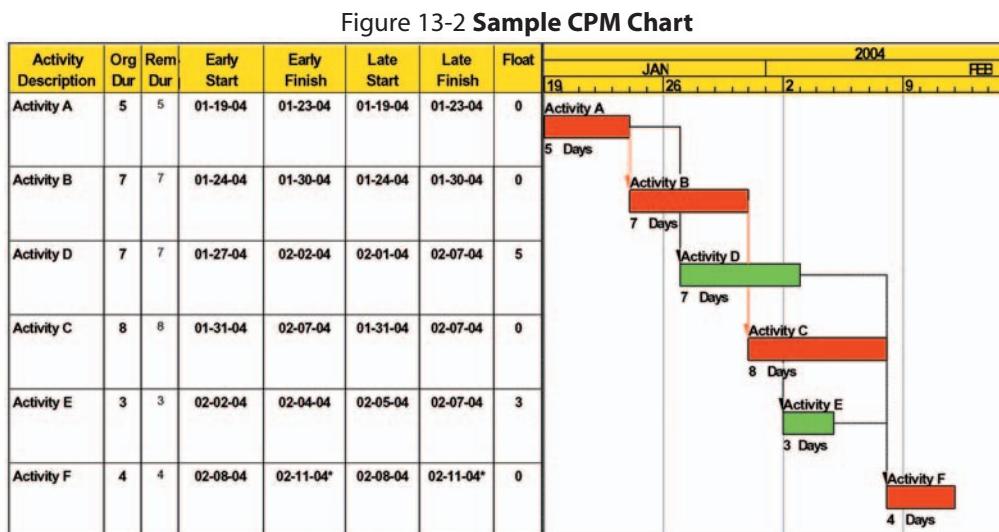


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Every activity takes more time than you have.

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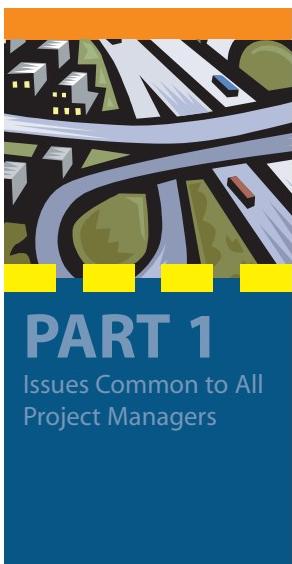


- The schedule is a "living" document. It needs to contain current information and conditions to provide an up-to-date picture of the project status. One common complaint about schedules is that, once they are prepared, they are hung on the wall to turn yellow and never be used again. The "living" nature of the CPM is one of its big advantages. With activities interconnected, the impact of an update or a potential change is readily apparent.
- The schedule must reflect reality so that any potential slippage in the schedule can be identified early and the situation corrected before it becomes a serious issue. One common pitfall is to make the schedule fit target or project milestone dates by assigning unrealistic durations to individual activities. Some of the current CPM software allows automatic updating of activities. While using this automated feature is easier than verifying the status of each activity separately, this practice may show the project as continuing on schedule from month to month when it really is starting to fall behind.
- The critical path can change. Since the schedule is a living document the critical path can and often does change to reflect the dynamic nature of FDOT projects.

The following is a quick review of the basics of CPM scheduling:

- Critical Path.** The shortest path through a project network. Any delay on this path will result in a corresponding delay of the end date of the project.
- Early Start/Early Finish.** The earliest date an activity can start or the earliest date an activity can finish based on current logic and the estimated duration of the activity.
- Late Start/Late Finish.** The latest date an activity can start without delaying the completion of the project or the latest date an activity can finish without delaying the end date of the project based on the current logic of subsequent activities.
- Float.** Although there are several different types of float, total float is most commonly used. Total float is the difference between the early finish date and late finish date of an activity (early and late start dates could also be used). Positive float indicates how many days an activity can slip before the activity

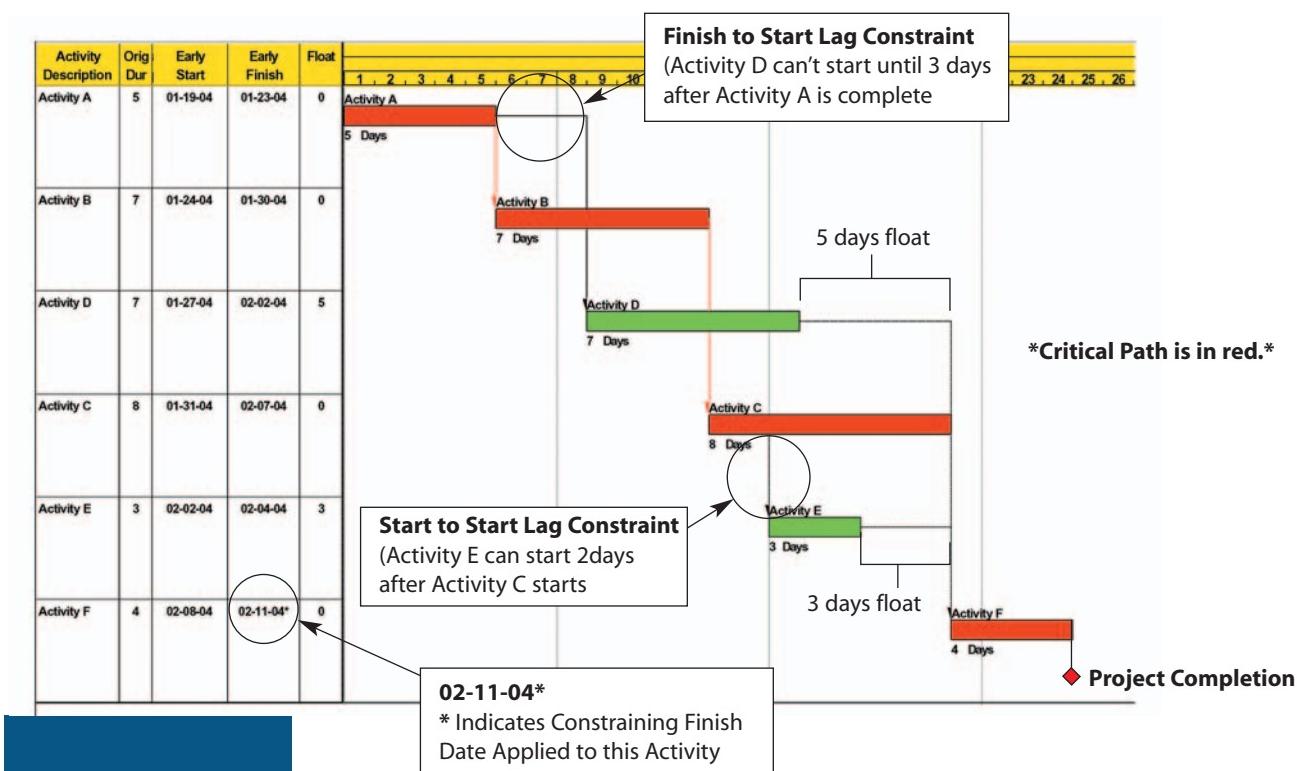
CHAPTER 13 - Scheduling



will cause a slip in the end date of the project. Similarly, negative float indicates how late the end date will be delayed if an activity continues to have the same negative float and no change is made to subsequent activities. Figure 13-3 illustrates float in a CPM schedule.

Constraints. Dates can be manually applied to the start or finish date of an activity rather than having the date calculated solely on the logic of the network. For example, to keep activities within a funding year, Start No Earlier than (SNE) or Finish No Later than (FNL) dates can be used so that an activity is in line with the phase in the work program. The beginning and end of programmed phases are committed dates and are, therefore, commonly constrained. Similarly, mandatory start or mandatory finish dates can be used to lock in a particular start or finish date. Mandatory dates are often used with contract milestones, specific agency approval dates and public hearings. Constraints that result from mandatory dates often disregard schedule logic, and thus the schedule is misleading.

Figure 13-3 **Float and Constraints**



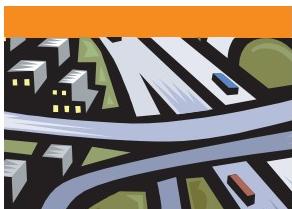
Why Do We Need Them?

The benefits of project schedules are addressed simply and accurately in Paragraph 2.1.4 **Procedure 700-000-000, Construction Project Administration Manual:**

"If used properly, the schedule is a management and communications tool that can be used to anticipate and prevent problems from occurring."

Here are some advantages a carefully prepared and regularly updated schedule can provide for FDOT team members.

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PART 1
Issues Common to All Project Managers



Nothing is ever so simple as it first seems.

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- The schedule preparation process can help the team think through the project from beginning to end. Sometimes this planning step is overlooked or shortened in the interest of getting a schedule in place quickly. Documenting the rationale for the schedule helps everyone stay focused on the logical sequence of activities.
- It should be a management tool for the FDOT Project Manager, other district staff and the consultant Project Manager. If all team members have input and are regularly involved in the updating process, then the schedule can provide a road map to successful project completion.
- It helps to manage the dollar commitment for each stage of the project. Because the schedule can be "loaded" with the resources required for each activity in terms of staff and dollars, it allows the projection of expenditures of project funds.
- It increases efficiency. Team members can focus on the tasks that most need to be addressed by placing attention on the lowest value of float or by using special sorts of the data to direct each team member to those activities for which they are responsible.
- It can provide a performance measure as well as a historical record that can be used to develop or refine templates to make scheduling of future projects more accurate.
- It can help ensure a quality product by incorporating time for quality check activities into the schedule at appropriate points.

How Do We Use Them?

The schedule can be used in ways other than supplying historical information and determining if a project is ahead or behind schedule. Some other uses are listed:

- It can be a valuable tool for the allocation of additional funds. Many districts maintain a framework of all projects in the district interfaced with individual project schedules. This overview allows easy evaluation of where to place additional funds in the overall program.
- Similarly, this structure facilitates the reallocation of funding within a given time frame.
- The schedule can facilitate evaluation of resources to aid in focusing them to handle critical needs in response to a potential or actual delay.
- It can be used in a mentoring program with new PMs to familiarize them with the FDOT processes.
- The schedule provides a look beyond what has happened to what might happen, thus allowing the PM to proactively anticipate, mitigate and eliminate potential problems.

Building a Schedule

The easiest and most efficient way to build a schedule is to work from an existing schedule to help identify the required sequences and time durations for the new project. The development of a well-thought-out template, as some districts have done, is an ideal way

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Patton's Law:
A good plan today
is better than a
perfect plan
tomorrow.

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to help the PM plan a new project. One caveat when using a template is to be sure to think through each step in the template carefully to ensure it applies to the current project. Individual projects may have unique conditions that will vary from the typical project reflected by a template. It is easy to pick up the template, quickly run through it and hand it off to a scheduler. The end result of such a lack of scrutiny may be overlooking some critical areas.

There are several necessary tasks that are not always included in a project task list. These include all the steps necessary for adequate quality control, FDOT reviews, graphics production, printing and assembly, meetings and other important project-management functions. These tasks are equally as important to project success as the project-specific production tasks, and they must be accounted for in the schedule.

When developing a schedule, it is important to understand the use of constraining dates. When a CPM schedule is used, the activities are linked together, durations are assigned, and resources and responsible team members may be identified. But there should be another—step in the process—outside constraints must also be considered before the schedule is complete. In the Basics of Scheduling section at the beginning of this chapter several types of date constraints are described. There are many issues related to constraints, such as the need to:

- Identify FDOT constraints that should be incorporated into the schedule including both funding and legal requirements.
- Identify those who can supply other critical dates—district right of way manager and technical support services staff (geotechnical, surveying and mapping, and others).
- Recognize any external commitments that have been made that may be beyond the control of the Project Manager.
- Recognize other external factors that may impact the schedule. For example, local events such as city or county board meetings, volunteer advisory committees or necessary coordination with non-FDOT projects.
- Balance the letting plan so an unmanageable number of projects are not clustered in the same quarter, but distributed throughout the year.
- Coordinate with the schedule of the consultant PM. Although schedules prepared and used by consultants may have different purposes than that of the FDOT, they must be coordinated with key FDOT milestones.

Managing the Schedule

Managing the schedule is a significant part of the Project Manager's effectiveness in managing the entire project. Effective schedule management means responding to the changing needs and requirements of the project as well as to outside influences. It means making funding adjustments, to advance, slip or compress the schedule.

The importance of accurate, timely updates cannot be overemphasized. The frequency of updating depends on many factors including size and complexity of the project. Even when the standard may be to use monthly updates, there may be phases or portions of the project when weekly updates will be appropriate. These updates may be manual rather than a complete computer update. Accurate updating is very important when the schedule is a source of information for consultant or contractor payment. All parties

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The cover features a stylized illustration of a road or bridge under construction at the top. Below it, the title "PART 1" is prominently displayed in large white letters, followed by the subtitle "Issues Common to All Project Managers". A circular icon containing a green figure and the word "INFORMATION" is located on the left side. At the bottom, the text "FDOT Project Management Handbook" is visible.

should be promptly notified when the schedule changes, so they may adjust other affected schedules.

When managing a schedule, the Project Manager should understand the constraints used in preparing the schedule. Are activities connected because logic dictates the order in which they occur? Do manpower or other resources dictate how the activities are to be connected?

Key indicators to be aware of that may have a major impact on the schedule follow:

- Advance notification
- Public hearings
- Location design concept acceptance
- QA/QC/VE
- FDOT reviews
- Coordination with FDOT offices and other agencies
- Drainage/Utility design
- Surveying
- R/W mapping
- Documents to R/W
- R/W certification
- Permits clear
- Utilities clear

Schedule Reporting

The schedule can be presented in three basic formats. The logic diagram shows all the activities and the interconnections or constraints between each activity. A time-scaled diagram presents the logic on a time line, which makes it easy to see what date activities are planned to occur. The bar chart shows the activities on a calendar grid, but without the constraints. These formats are illustrated in Figures 13-4, 13-5 and 13-6.

Figure 13-4 Logic Diagram

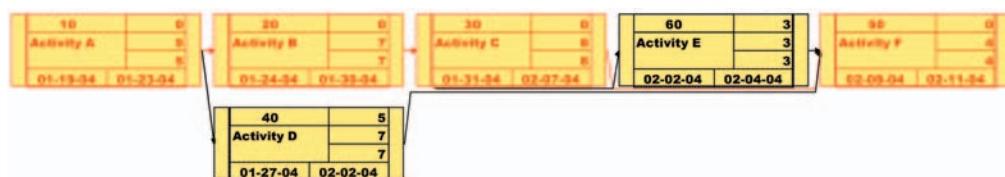
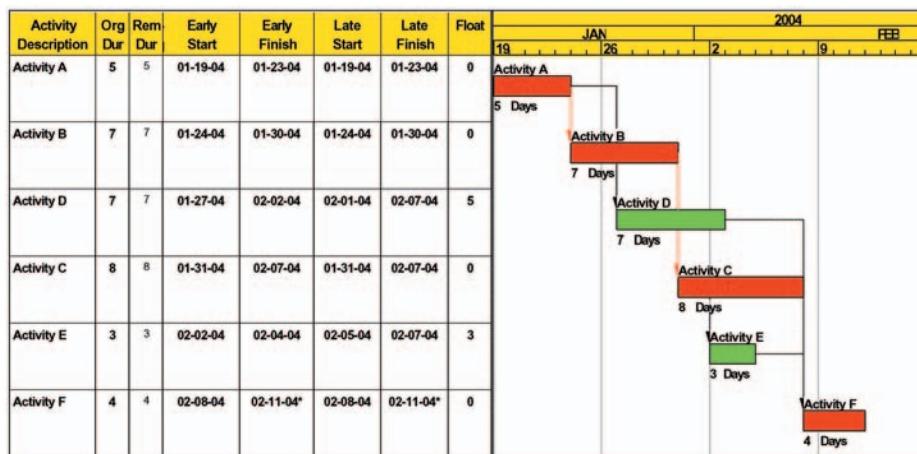
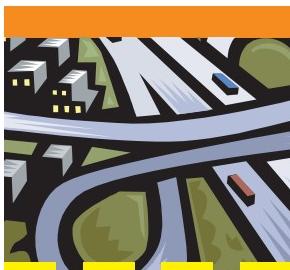


Figure 13-5 Time-Scaled Diagram



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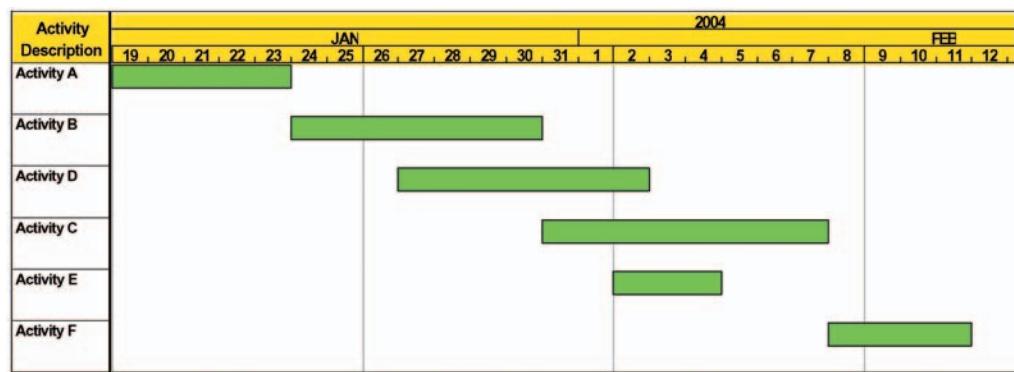


"There can't be a crisis this week - my schedule is already full."

- Henry Kissinger

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Figure 13-6 Bar Chart



A variety of tabular reports can be produced. The advantage of these reports is that they allow the user to focus on specific areas of interest or concern without having to digest the full schedule report. Reports can be sorted by area, department or responsible party. They can also be limited to activities that will occur in a specific period of time, such as a specific fiscal year or the next 30 days. A report of critical or near-critical activities can help focus the team on potential areas of concern. Samples are provided in Figures 13-7, 13-8, 13-9 and 13-10.

Figure 13-7 Responsibility Sort

| Activity ID | Activity Description | % Comp | Original Duration | Remaining Duration | Early Start | Early Finish | Late Start | Late Finish | Total Float | Budgeted Cost |
|--|--------------------------------|--------|-------------------|--------------------|-------------|--------------|------------|-------------|-------------|---------------|
| Richard Stevens - Site Project Manager | | | | | | | | | | |
| P1G100 | MOBILIZATION | 100 | 4 | 0 | 04-23-99A | 04-27-99A | 04-23-99A | 04-27-99A | | 100.00 |
| Alice White - Purchasing | | | | | | | | | | |
| P1NP200C | PROCUREMENT OF SIGN STRUCTURES | 100 | 10 | 0 | 05-02-99A | 06-03-99A | 05-02-99A | 06-03-99A | | 20,000.00 |
| Pete Reynolds - Electrical Crew Foreman | | | | | | | | | | |
| P2N2125B | INSTALL TEMP. ELECTRICS | 0 | 15 | 15 | 04-06-00 | 04-26-00 | 05-30-00 | 06-19-00 | 38 | 8,884.80 |
| P2N2130 | INSTALL ELECTRIC CONDUITS & | 0 | 19 | 19 | 04-27-00 | 05-23-00 | 06-20-00 | 07-17-00 | 38 | 42,243.08 |
| P2N2140 | INSTALL POWER & LIGHTING | 0 | 15 | 15 | 05-24-00 | 06-13-00 | 07-18-00 | 08-07-00 | 38 | 16,954.80 |

Figure 13-8 Look Ahead Report

| Activity ID | Activity Description | % Comp | Original Duration | Remaining Duration | Early Start | Early Finish | Late Start | Late Finish | Total Float | Budgeted Cost |
|-------------|---------------------------------|--------|-------------------|--------------------|-------------|--------------|------------|-------------|-------------|---------------|
| P1N2100 | PLACE CONST. BARRIER | 0 | 14 | 14 | 01-06-00 | 01-25-00 | 01-06-00 | 01-25-00 | 0 | 17,799.84 |
| P1N2190 | INSTALL SIGN SUPPORT STRUCTURE | 0 | 8 | 8 | 01-06-00 | 01-17-00 | 10-13-00 | 10-24-00 | 200 | 6,895.36 |
| P1N2195 | ERECT SIGNS | 0 | 3 | 3 | 01-18-00 | 01-20-00 | 10-25-00 | 10-27-00 | 200 | 5,371.56 |
| P1N2115A | GRUB & STRIP TOPSOIL | 0 | 8 | 8 | 01-26-00 | 02-04-00 | 01-26-00 | 02-04-00 | 0 | 12,533.12 |
| P1N2105B | INSTALL EROSION CONTROL DEVICES | 0 | 15 | 15 | 02-07-00 | 02-25-00 | 02-07-00 | 02-25-00 | 0 | 3,760.32 |
| P1N2200 | INSTALL TEMP. SHEETING | 0 | 12 | 12 | 02-28-00 | 03-14-00 | 02-28-00 | 03-14-00 | 0 | 9,347.04 |
| P1N2210 | EXCAVATE RETAINING WALL | 0 | 12 | 12 | 03-15-00 | 03-30-00 | 03-15-00 | 03-30-00 | 0 | 7,542.24 |

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The 90% rule of Project Scheduling:

The first 90% of a task takes 90% of the time, and the last 10% takes the other 90%.

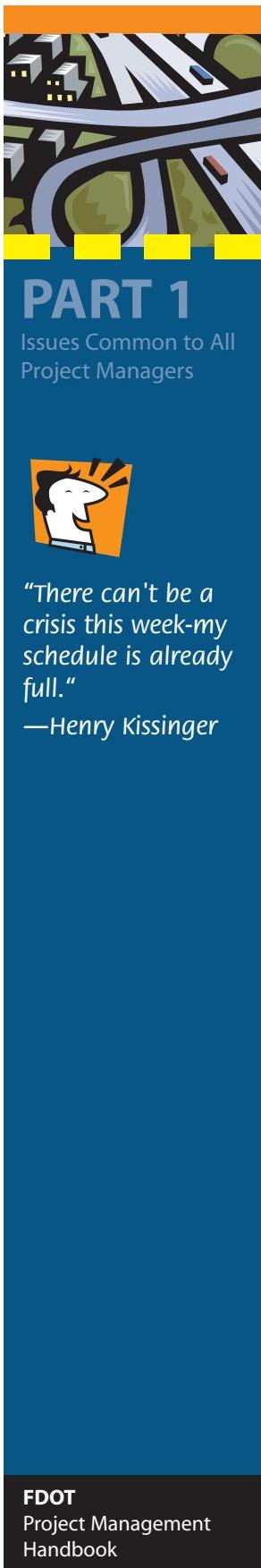
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Figure 13-9 Critical Activities Report

| Activity ID | Activity Description | % Compl | Original Duration | Remaining Duration | Early Start | Early Finish | Late Start | Late Finish | Total Float | Budgeted Cost |
|-------------|---------------------------------|---------|-------------------|--------------------|-------------|--------------|------------|-------------|-------------|---------------|
| P1N2100 | PLACE CONST. BARRIER | 0 | 14 | 14 | 01-06-00 | 01-25-00 | 01-06-00 | 01-25-00 | 0 | 17,799.84 |
| P1N2115A | GRUB & STRIP TOPSOIL | 0 | 8 | 8 | 01-26-00 | 02-04-00 | 01-26-00 | 02-04-00 | 0 | 12,533.12 |
| P1N2105B | INSTALL EROSION CONTROL DEVICES | 0 | 15 | 15 | 02-07-00 | 02-25-00 | 02-07-00 | 02-25-00 | 0 | 3,760.32 |
| P1N2200 | INSTALL TEMP. SHEETING | 0 | 12 | 12 | 02-28-00 | 03-14-00 | 02-28-00 | 03-14-00 | 0 | 9,347.04 |
| P1N2210 | EXCAVATE RETAINING WALL | 0 | 12 | 12 | 03-15-00 | 03-30-00 | 03-15-00 | 03-30-00 | 0 | 7,542.24 |
| P1N2220 | CONSTRUCT FOOTING | 0 | 27 | 27 | 03-31-00 | 05-08-00 | 03-31-00 | 05-08-00 | 0 | 110,196.72 |

Figure 13-10 Location Sort

| | Lane | Activity ID | Resp | Rem Dur | % | Early Start | Early Finish | Total Float | Resource | | | | | | | | | | | | | | | | | | | | |
|---|----------|-------------|------|---------|----------|-------------|--------------|-----------------------------------|----------|-----|----------|-----|----|---|----------|----------|-----|-----------------------------------|--|-----|---------|----|----|---|----------|----------|-----|---------------------------------|--|
| Station 050 + 00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| General Construction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Walk/Road/Parking Appurtenances | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>N05</td><td>P1N2190</td><td>GG</td><td>8</td><td>0</td><td>01/06/00</td><td>01/17/00</td><td>200</td><td>LABOR-G, DRIVER, FOREMAN,</td><td></td></tr> <tr> <td>N05</td><td>P1N2195</td><td>GG</td><td>3</td><td>0</td><td>01/18/00</td><td>01/20/00</td><td>200</td><td>CRANE, FOREMAN, OPERATOR,</td><td></td></tr> </table> | | | | | | | | | | N05 | P1N2190 | GG | 8 | 0 | 01/06/00 | 01/17/00 | 200 | LABOR-G, DRIVER, FOREMAN, | | N05 | P1N2195 | GG | 3 | 0 | 01/18/00 | 01/20/00 | 200 | CRANE, FOREMAN, OPERATOR, | |
| N05 | P1N2190 | GG | 8 | 0 | 01/06/00 | 01/17/00 | 200 | LABOR-G, DRIVER, FOREMAN, | | | | | | | | | | | | | | | | | | | | | |
| N05 | P1N2195 | GG | 3 | 0 | 01/18/00 | 01/20/00 | 200 | CRANE, FOREMAN, OPERATOR, | | | | | | | | | | | | | | | | | | | | | |
| Northbound Outer Lane | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Grading | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>SO3</td><td>P2N3120</td><td>GG</td><td>7</td><td>0</td><td>04/27/00</td><td>05/05/00</td><td>124</td><td>FOREMAN, DOZER, OPERATOR</td><td></td></tr> </table> | | | | | | | | | | SO3 | P2N3120 | GG | 7 | 0 | 04/27/00 | 05/05/00 | 124 | FOREMAN, DOZER, OPERATOR | | | | | | | | | | | |
| SO3 | P2N3120 | GG | 7 | 0 | 04/27/00 | 05/05/00 | 124 | FOREMAN, DOZER, OPERATOR | | | | | | | | | | | | | | | | | | | | | |
| Electrical Utilities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| SO4 | P2N2130 | PR | 19 | 0 | 04/27/00 | 05/23/00 | 38 | ELEC, FOREMAN, LABOR-S, | | | | | | | | | | | | | | | | | | | | | |
| SO4 | P2N2140 | PR | 15 | 0 | 05/24/00 | 06/13/00 | 38 | ELEC, LABOR-S, FOREMAN, | | | | | | | | | | | | | | | | | | | | | |
| Station 075 + 00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southbound Outer Lane | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Barriers & Enclosures | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>N07</td><td>P1N2100</td><td>GG</td><td>14</td><td>0</td><td>01/06/00</td><td>01/25/00</td><td>0</td><td>LABOR-G, CRANE, OPERATOR,</td><td></td></tr> </table> | | | | | | | | | | N07 | P1N2100 | GG | 14 | 0 | 01/06/00 | 01/25/00 | 0 | LABOR-G, CRANE, OPERATOR, | | | | | | | | | | | |
| N07 | P1N2100 | GG | 14 | 0 | 01/06/00 | 01/25/00 | 0 | LABOR-G, CRANE, OPERATOR, | | | | | | | | | | | | | | | | | | | | | |
| Northbound Outer Lane | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Removals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| SO4 | P2N2115B | GG | 4 | 0 | 03/31/00 | 04/05/00 | 38 | FOREMAN, LABOR-H, LOADER, | | | | | | | | | | | | | | | | | | | | | |
| SO3 | P2N3110 | GG | 9 | 0 | 04/14/00 | 04/26/00 | 124 | FOREMAN, LABOR-G, LOADER, | | | | | | | | | | | | | | | | | | | | | |
| Excavation & Backfill | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| SO4 | P2N2125A | GG | 10 | 0 | 04/06/00 | 04/19/00 | 43 | FOREMAN, LABOR-G, LOADER, | | | | | | | | | | | | | | | | | | | | | |
| Asphaltic Concrete Pavement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| SO4 | P2N2150 | JAM | 14 | 0 | 06/14/00 | 07/03/00 | 38 | FOREMAN, ROLLER2, OPERATOR, | | | | | | | | | | | | | | | | | | | | | |



"There can't be a crisis this week-my schedule is already full."

—Henry Kissinger

Trouble Shooting: How to Recognize and Correct the Schedule "Oops"

Signs of potential trouble:

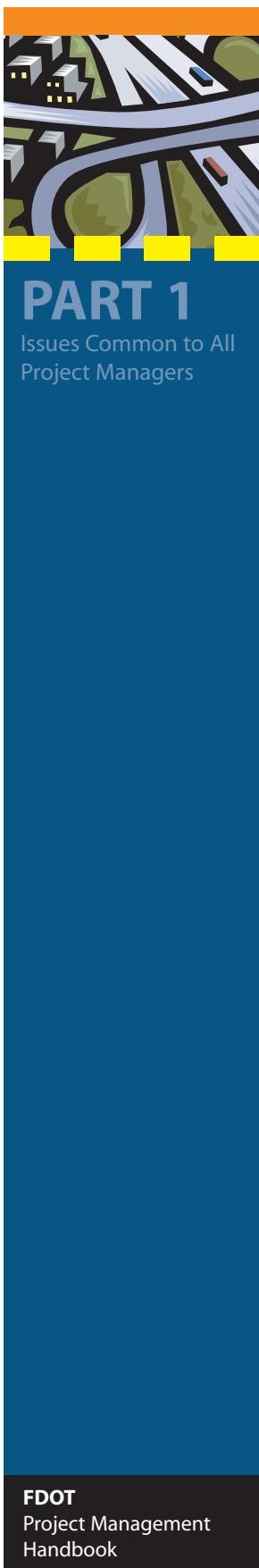
- A critical path that does not make sense or does not meet the contractual milestones.
- Activities that have too much float.
- Constraints between activities that are inaccurate.
- Continuously late updates or updates with inaccurate actual start and completion dates.
- Negative float or a reduction in positive float from month to month.
- All activities are exactly on schedule with no change in float from month to month. While this hopefully indicates great scheduling ability with an exceptional project team that completes every activity exactly on schedule, it could also indicate that the schedule was updated automatically with little thought, or was being updated to mask an ongoing problem.

How to correct or recover:

- Verify that the update is accurate. Are all remaining durations correct?
- Review activity durations and shorten them if possible and realistic, perhaps by applying additional resources.
- Eliminate unnecessary activities. Are there activities that came from a template or previous project that are not applicable on this phase of this project?
- Change logic. The tendency is to link all activities from the end of the preceding activity to the start of the next (finish to start). Activities can overlap or be connected by lag activities, thus some activities may be able to start during a previous activity rather than at its completion.
- If all else fails adjust commitment dates or create a new schedule. But before making changes, get formal approval. Be aware that funding year changes may need to be approved by a higher authority.

It is best to identify activities that bear the greatest risk of being delayed, such as permitting, right of way acquisition and delivery time of special materials. When the schedule is first developed, plan options for recovery if these activities are delayed. Then there will not be an "oops" because the problem was anticipated and an alternative solution implemented.

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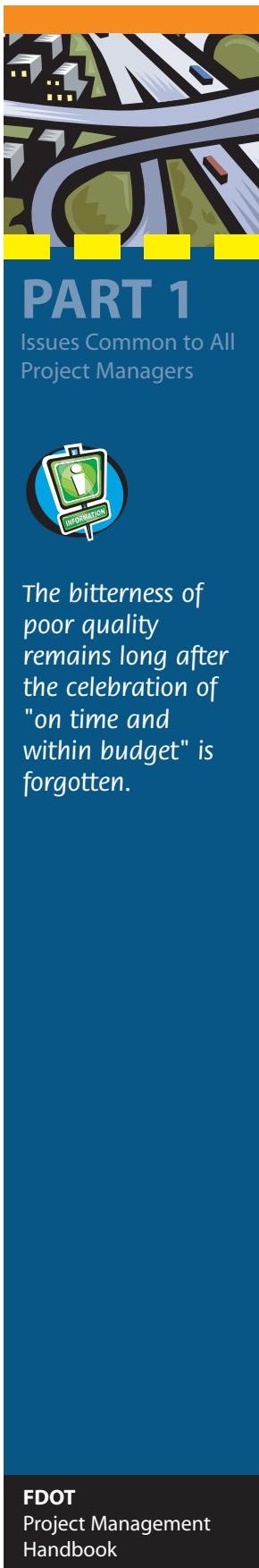
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 5. *Procedure 700-000-000*
 6. *Section 2.1*



CHAPTER 14

Quality Assurance and Quality Control

Quality assurance and quality control are the processes used to ensure that the project deliverables meet the project objectives and are of an appropriate quality. It is recognized that perfection is difficult to achieve and that the cost of a perfect product would usually be prohibitive. However, there are defined standards that must be met in Florida Department of Transportation (FDOT) projects. Quality frequently comes in conflict with the schedule. It is the responsibility of the Project Manager to meet both quality and schedule objectives. But, in general, poor quality work should not be accepted just to meet a schedule. FDOT and consultant Project Managers use the terms "quality assurance" and "quality control" somewhat differently. Quality assurance and quality control are discussed below from the perspectives of both FDOT and consultants.

FDOT Quality Assurance and Quality Control

Quality assurance and quality control are two distinct processes used by the FDOT to ensure that the public receives a quality product. Quality assurance is the responsibility of, and performed by, the Central Office. Quality control is a responsibility of the District Offices, and is performed by the districts and their agents (consultants), as appropriate. Most districts have quality control plans, at least for design. District plans should be reviewed and complied with, as appropriate. Specific Quality Assurance and Quality Control (QA/QC) requirements for design projects can be found in **Procedure 625-000-007, Chapter 18, Plans Preparation Manual (PPM)**, Volume I. QA/QC for construction projects is detailed in [Section 3.2 of Procedure No. 700-000-000, Construction Project Administration Manual](#) (CPAM). Another useful construction-related reference is the statewide construction [QA/QC Plan](#).

Two important parts of any FDOT Project Manager's QC responsibility are to ensure that the consultant's QA/QC plan is being followed adequately and to review project deliverables to ensure that they are of an adequate and appropriate quality. He/She should meet with the consultant PM early in the project to reach a common understanding of QA/QC methodologies to be used and submittal requirements. The FDOT Project Manager should check the QA/QC actions taken by the consultant by visiting the consultant's office and reviewing the quality control documentation. There should be a record of all QA/QC activities. Marked-up copies of reviewed reports and plans should be on file. The consultant's project schedule should allow adequate time for QC reviews. If possible, the FDOT PM should schedule an office visit to observe a quality control review as it is taking place. He/She must ensure that the individuals identified in the project QA/QC plan are actually performing assigned QA/QC tasks. Another control technique is to require that documentation of quality control activities accompany submittals. Documentation could include completed checklists, certifications or the reviewers' marked-up copy of the reviewed document itself. In some districts many of the actions discussed above have been formalized in a formal QC audit process.

Traditionally, FDOT reviews of formal submittals have been the focus of quality control for consultant projects. However, when the FDOT Project Manager and his/her technical team members take the proactive approach of reviewing work-in-progress, the result is usually higher quality submittals. Problems can be identified and solutions worked out

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There is never time to do it right, but there's always time to do it over.

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before submittals. The review team also will have a better understanding of major issues and what to expect in the submittal.

The FDOT PM should have a clear understanding of the objectives of project submittal reviews. It is the consultant's responsibility to perform quality control reviews before making every submittal. FDOT reviews are to ensure that the submittal meets project and contract requirements in accordance with Department policies and procedures, not to perform quality control reviews for the consultant. Detailed, in-depth reviews are usually not necessary or desirable and serve to relieve the consultant of some responsibility for the quality of the product. Submittals found to be unacceptable should be returned for re-submittal. Frequently pressures on the FDOT Project Manager to maintain the project schedule make it difficult to require re-submittals of poor quality work. Poor quality work, however, eventually results in a project delay. Thus it is usually better to correct the quality problem at the earliest possible date.

The following list contains some helpful guidelines for reviewing and commenting on consultant submittals:

- Make sure that what each reviewer needs to see is clear. For instance, in a design submittal, the structures reviewer may want to see only the bridge plans, but the geotechnical group may need the full set. Some reviewers may need to see submittals at certain stages of a project only. Reviewer requirements should be determined prior to the first submittal. A review matrix showing this information may help the PM manage this process.
- The FDOT PM should distribute copies of the submittal to all appropriate reviewers as quickly as possible. Reviewers' comments are to be returned directly to the FDOT PM, not to the consultant, for control and resolution of conflicting comments.
- Comments should be categorized as fatal flaws, errors, suggestions or personal preferences.
- Comments requiring work beyond the scope of services should not be forwarded to the consultant. If it is determined that a comment raises a valid need, a contract amendment should be processed according to procedures explained in Chapter 12. Frequently situations arise when the scope of work is not specific regarding a comment, or the comment will require a very minor work effort. In these cases the comment should be forwarded with the understanding that the FDOT and consultant PMs must exercise good judgment in the final resolution.
- Personal preference comments generally should not be forwarded. If they are, they should be clearly labeled. Because the consultant is professionally responsible for her/his work, personal preferences should not be imposed.
- When submittals are reviewed by a number of FDOT individuals, the FDOT PM should review and consolidate the comments before transmitting them to the consultant.
- Comments must be returned within the time frame allowed in the project schedule. Otherwise, the FDOT may be delaying progress on the project.

Stay Focused on the Important Issues. A recent study of FDOT reviews of design projects found that the average cost of a review comment is \$200. This figure takes into account the time of both the FDOT reviewers and the consultant to research and address

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Issues Common to All Project Managers

"Quality is everyone's responsibility."
- W. Edwards Deming, father of modern day Quality Improvement.

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each comment. Design projects averaged 180 comments per submittal. Clearly the review process is expensive. This study also investigated a number of Phase 1 and 2 design submittals and found that 50 percent of the comments were editorial in nature, 10 percent related to format and 40 percent addressed engineering issues. Since the primary purpose of these submittals should be to resolve engineering issues, at least half the cost was expended on comments that were not really important. This same concern applies to all types of projects. FDOT reviewers should focus on the important issues.

Consultant Quality Assurance and Quality Control

Consultant firms frequently have a firm-wide Quality Assurance and Quality Control (QA/QC) plan that identifies general responsibilities and required actions to assure quality products. FDOT consultants are also required to have project-specific QA/QC plans. The consultant project QA/QC plan should describe the processes in place to assure quality and the quality control procedures to be used. It should identify specific individuals to be involved and outline their responsibilities. The project QC officer who has responsibility for ensuring that the plan is properly executed should be identified. QC reviewers should not be closely associated with the project and should be as or more experienced than the originator. If qualified reviewers are not available in the consultant firm, then the responsibility should be subcontracted. The plan should describe how the QC activities will be documented. The submittal review process should be described in detail. The following procedures are typically used:

1. The originator (usually the Project Manager) produces the submittal to the best of his/her ability. The submittal should be thoroughly checked by the originator.
2. Once it is considered ready for submittal, the QC reviewer critiques the document. For complex submittals, there may be more than one reviewer. The submittal is marked up by the reviewer and returned to the originator.
3. The originator reviews the comments and then meets with the reviewer to ensure that the intent of the originator and the comments are understood. Since it is the originator who accepts professional responsibility for the submittal, she/he must agree to make the changes recommended. As a result, each comment is either accepted or rejected.
4. The necessary corrections are made, and the submittal is returned to the reviewer.
5. The reviewer verifies that the corrections were properly made, and the document is returned to the originator.
6. Final corrections are made, and the document is submitted to the FDOT for review.

If done properly, this process is time and labor consuming. It must be properly accounted for in the project schedule, negotiations and budget. Even more importantly, the process must be followed.

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QA/QC applies to all project phases.

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Project Phases

Each project phase has different QA/QC issues that must be addressed. These are discussed below:

Planning. Although the FDOT does not have specific QA/QC requirements for planning projects, these are important activities. All submittals for planning projects should be subjected to a peer review in the same manner described above. Common quality issues are data collection, study methodology, assurance that report conclusions and recommendations are supported by study findings and quality of the writing.

Project Development and Environment (PD&E). Quality issues for PD&E projects are similar to those for planning projects. In addition to formal submittals, a QC review of display materials for public meetings and hearings is important. The reviewer must be sensitive to public "hot button" issues when reviewing material to be made available to the public.

Design. QA/QC for design projects is generally a well-defined process. Usually the QA/QC plan is the first deliverable for a consultant design project. The consultant Project Manager should review [Chapter 18](#), Volume I of the PPM before preparing the QA/QC plan to ensure that all requirements are met. The plan should be unique to the project, not "off the shelf." Each project has its own technical issues, scope, schedule and team; all of which should be accounted for in the plan. It is important that the work of subconsultants be addressed in the plan. Good design quality control requires several reviewers who represent all technical skills involved. Technical skill areas may include highway design, drainage, traffic, maintenance of traffic, structures and constructability.

Right of Way. All submittals for R/W projects should undergo reviews that include methodology, report preparation and quality of writing. In addition, R/W projects must address QA/QC issues related to full compliance with laws, rules and regulations.

Construction. Quality control is an overriding issue for construction projects. The contractor has specific responsibilities, as defined in the Standard Specifications. Quality control is also a primary responsibility of the Construction Engineering and Inspection (CEI) consultant, who monitors and evaluates the contractor's product and performance. The FDOT construction Project Manager must ensure that the CEI adequately performs its responsibilities and that the Central Office performs quality assurance reviews, as required in the statewide construction [QA/QC Plan, Section 3.2](#) of the CPAM details specific quality control requirements. The CEI consultant should have an internal QA/QC plan that addresses these topics: CEI operating procedures, sufficient staff to ensure adequate inspection coverage, checks to ensure that inspectors are performing properly, and internal quality reviews of records and office procedures. It should be the objective of the CEI to find and correct performance problems before issues come to the attention of the FDOT Construction Project Manager.



Source: FDOT

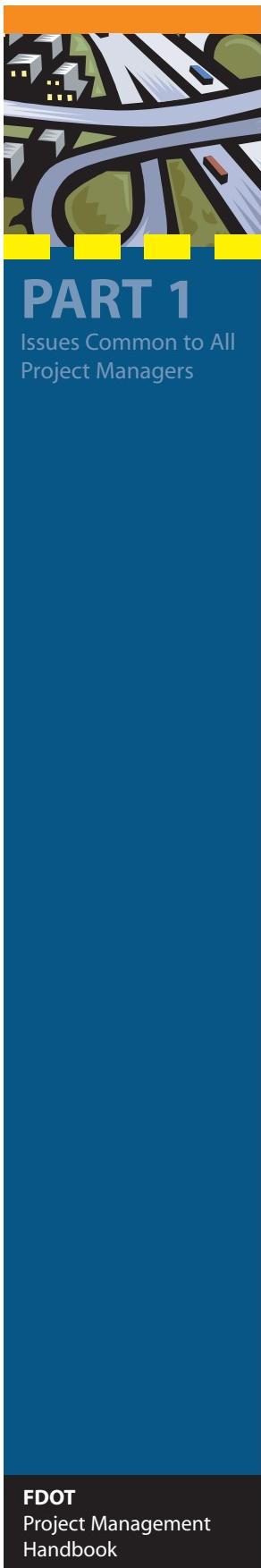


Maintenance. There should be Quality Assurance and Quality Control processes in place to ensure the quality of maintenance projects and compliance with FDOT procedures. QA/QC processes include adequate inspection of the work and sufficient documentation to ensure compliance with contract specifications. For Asset Management contracts, there should be adherence to the [Asset Management Monitoring Plan](#), found on the Maintenance Office website.

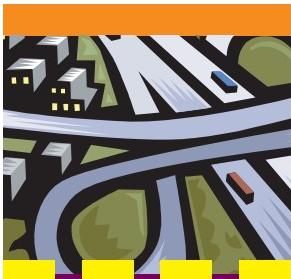
Internet References

Internet references cited in this chapter are linked directly in the text or can be found below.

- Procedure 625-000-007 [Chapter 18, Plans Preparation Manual](#), Volume I
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *600 Series*
 6. *Procedure No. 625-000-007*
 7. *Chapter 18*
- Procedure No. 700-000-000, [Section 3.2, Construction Project Administration Manual](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *700 Series*
 6. *700-000-000*
 7. *Section 3.2*
- The statewide construction [QA/QC Plan](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Construction Office*
 4. *Specialized Area*
 5. *Statewide QA/QC Plan Information*
- The [Asset Management Monitoring Plan](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Maintenance Office*
 4. *Asset Management*
 5. *Asset Management Monitoring Plan*



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Planning projects
require extensive
coordination.

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CHAPTER 15

Planning Project Management

A diverse range of studies and projects fall under the "planning" umbrella. Although this diversity precludes the development of a single, simple work plan for use in conducting and managing all of these projects and studies, there are several common features that can be identified. Four are addressed in this chapter: coordination with other entities, public involvement, cost estimates and work programs. This chapter presents guidelines for the successful completion of planning objectives. A brief overview of typical studies is also included.

For other project phases, Department guidelines are available (the **PD&E Manual** and the **Plans Preparation Manual**). These references outline well-defined procedures and methods. No such guidelines exist for planning projects, however. The diversity of kinds of projects and study types that are undertaken precludes the development of a single set of basic work guidelines. The planning Project Manager, therefore, relies on her/his academic training in the fields of planning or transportation engineering for necessary technical knowledge and expertise. He/She gains both technical know-how and management skills from work experience and training. A great deal of valuable information can be found on the [Planning Office](#) website.

Perhaps the most critical management function in accomplishing the Florida Department of Transportation (FDOT) planning phase of Project Management is that of *coordinating*. Outside entities are often involved in planning projects. Multiple entities at various levels must reach consensus to ensure that each plan or study comes together effectively. The Project Manager must be able to effectively coordinate the many activities of everyone who plays a role in planning. Effective coordination requires good management skills, especially in the communication, leadership and consensus-building areas.

Planning Project Types

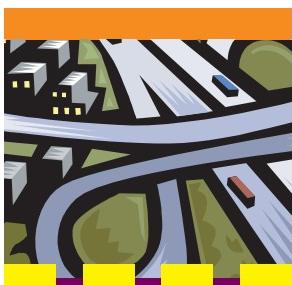
A brief description of the major types of planning studies undertaken by the FDOT follows.

Modal Planning. The Department coordinates statewide planning for each transportation mode as well as intermodal planning. Modal plans include the following:

- Florida Intrastate Highway System (FIHS)
- Transit Strategic Plan
- Florida Aviation System Plan
- Rail System Plan
- Florida Seaport Mission Plan
- Strategic Intermodal System

The overall purpose of modal systems planning is to coordinate the movement of people and good throughout Florida, by looking at all the facilities on a statewide basis and coordinating with all owners and providers of transportation facilities and services. More discussion on modal plans can be found in Chapter 7 and the internet references cited.

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FDOT is a valuable
resource to the
MPOs.

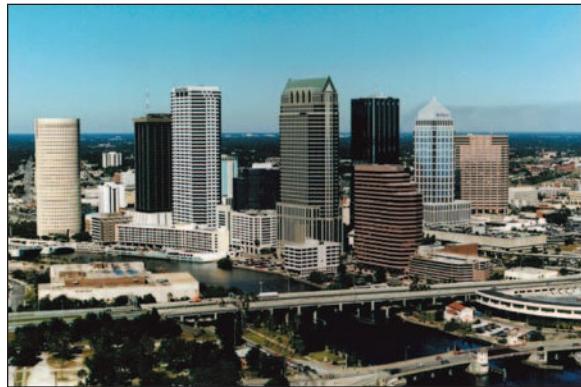
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Area Study. The Department studies geographic areas where major state roadway facilities are located. Performed in cooperation with a local jurisdiction, area studies involve multiple corridors, emerging neighborhoods and communities that are experiencing high population and traffic growth or significant existing transportation capacity deficiencies. Area studies are usually sub-county, with planning horizons of 5 to 15 years. These studies often result in several actions:

- New capacity enhancement projects for the Department's Work Program.
- Modifications to the local Comprehensive Plan.
- Capacity enhancement projects for the local government Capital Improvements Program.
- Updates for the Long Range Transportation Plan (LRTP).

Study elements and activities might involve the following tasks:

- Public involvement
- Land-use assessment
- Roadway and traffic data collection
- Existing and future condition assessments
- Projection of future traffic
- Alternatives
- Analyses
- Recommendations
- Documentation

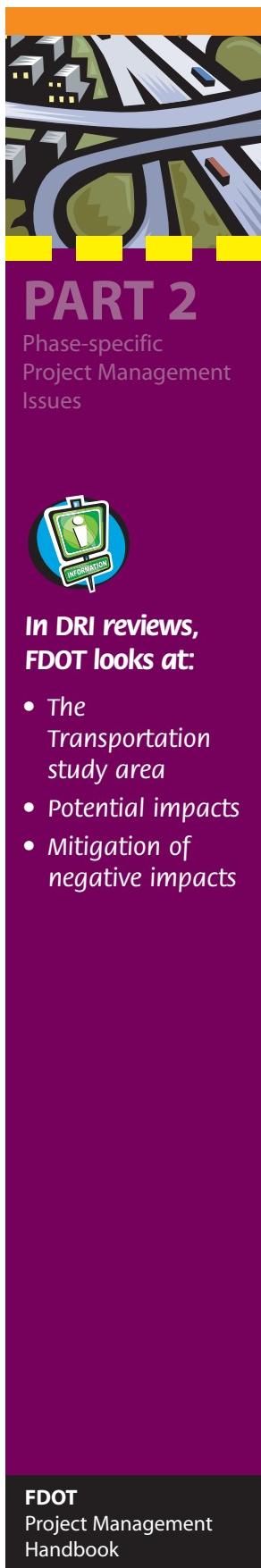


Source: FDOT

Long Range Transportation Plan (LRTP). The responsible agency for LRTPs is the local metropolitan planning organization (MPO). The Department, however, has a keen interest and role in plan updates. It provides transportation modeling support and oversight. Modeling involvement differs by district and by MPO area within a district. Activities might include calibrating the model, updating both the specific trip generation equations and the network, and reviewing oversight for MPO staff. A key role of planning staff is to ensure that the LRTP and the Transportation Improvement Plan (TIP), which are discussed in Chapter 7, are consistent with the projects in the FDOT Work Program and the Florida Intrastate Highway System (FIHS) Cost Feasible Plan. There is an established procedure in the Work Program instructions defining the schedule for coordination and how it is to take place.

As an MPO resource, the Department reviews analysis techniques, results and recommendations. Usually the Department requests a review of all technical analyses completed for the state roadway facilities within the plan update limits. Additionally, the Department is a resource to the MPO in support of financial funding identification for the cost-feasible analysis. The Department also supports the public involvement program by providing guidance, support staff and assistance in the preparation and conduct of this program.

Transportation Modeling. The Department develops and maintains the adopted transportation models used throughout the state—the Florida Standard Urban Transportation Model Structure (FSUTMS). District staff is involved in all aspects of model development



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**In DRI reviews,
FDOT looks at:**

- The Transportation study area
- Potential impacts
- Mitigation of negative impacts

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including data collection, validation and application. Transportation models (FSUTMSs) are the backbone of the long range forecasting process that guides the development of long-range plans, which ultimately identify projects for the work programs of the Department and local agencies.

Corridor Studies. Corridor studies fall into one of the following six types:

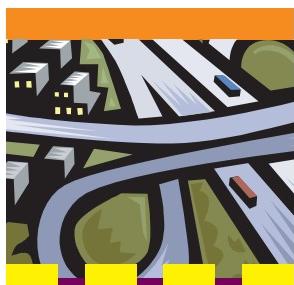
- Multi-modal or investment studies
- FIHS master plans and action plans
- Corridor management studies
- Access management reviews/studies
- Congestion management systems or transportation systems management studies
- Concept analysis reports.

The overall objective of corridor studies is to develop an enhancement or improvement plan for immediate and 5-, 10- and 20-or-more-year capacity and safety needs of the study corridor. Access management, congestion management system (CMS) and transportation system management (TSM) studies typically focus on immediate or short term improvements related to traffic operational improvements rather than significant capacity enhancements. While comprehensive multi-modal, FIHS, and concept analysis studies identify short term operational and safety improvements, their main thrust is to address future needs in a comprehensive framework. Subjects might include capacity enhancements, land-use considerations (in conjunction with local agencies), transit system needs, and accommodation of pedestrian and bicycle needs. These studies produce a master plan for the long term management of a corridor. Several study types involve local governments and their processes for managing a transportation corridor. The results of these corridor studies will provide input to the next phase of project development.

Development Reviews. Section 380.061, Florida Statutes (F.S.) addresses general requirements for the application and approval of developments of regional impact (DRIs). Specific review requirements for DRIs are established by Rule Chapter 9J-2, Florida Administrative Code (F.A.C.), administered by the Florida Department of Community Affairs (DCA). DRIs are identified developments based on specified land-use thresholds established within Rule 9J-2, F.A.C. DRI review requirements are the strictest imposed on the Department. S. 380.061, F.S., also addresses general requirements of Florida Quality Developments (FQDs), a type of expedited DRI. Rule Chapter 9J-28, F.A.C. establishes additional criteria to be followed when preparing an application for approval of an FQD. The FDOT planning staff reviews the technical analysis of the transportation study area as submitted by an applicant. The FDOT planning staff also evaluates direct and indirect potential impacts and recommends actions to mitigate negative effects on the state roadway system resulting from major developments. The [Site Impact Handbook](#) is the ready-reference tool to be used for conducting development reviews.

Other Studies. Definitions and references for several other planning study types are summarized below:

- **Interchange Justification Report (IJR) and Interchange Modification Report (IMR).** Technical and administrative procedures for interchange justification/modification are found in [Procedure 525-030-160, Interchange](#)



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There are many types of planning studies.

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Justification and described in the Interchange Handbook and associated training materials.

- FIHS Master Plans/Action Plans. These documents identify both short and long term capacity improvements to FIHS facilities consistent with FIHS standards. Master Plans shall also identify potentially new interchanges or modifications to existing ones. Action Plans are for controlled access facilities on the FIHS. Requirements for these plans are contained in **Procedure 525-030-250, Development of the Florida Intrastate Highway System**.
- **Level of Service (LOS) Studies.** The Department's Roadway Level of Service Handbook implements the procedures required by Subsection 334.044(2), F.S. and Rule Chapter 14-94 F.A.C. This handbook has a multimodal perspective in response to a 1999 update of Subsection 163.3180 (15)(a), F.S. LOS studies are normally used as a part of another study. These studies are also done to determine how all or parts of the State Highway System (SHS) are performing. The **Roadway Level of Service Handbook** is consistent with the Transportation Research Board **Highway Capacity Manual**.
- **Access Management/Median Opening Studies.** Technical details for these are presented in Rule Chapters 14-96 and 14-97, F.A.C., and in several working documents prepared by the Department's Systems Planning Office that can be found at their Access Management page. Typical studies include corridor-wide access management plans and access management information for PD&E and design projects.
- **Strategic Intermodal System (SIS).** Section 339.641, F.S., provides for a wide range of transportation-related changes, including provisions that create the Florida SIS. It charges the Department to develop in cooperation with metropolitan planning organizations, regional planning councils, local governments, the Statewide Intermodal Transportation Advisory Council and other transportation providers a Strategic Intermodal System Plan. The plan shall be consistent with the Florida Transportation Plan (FTP) developed pursuant to Section 339.155 F.S. and shall be updated at least once every five years, subsequent to updates of the Florida Transportation Plan.
- **Local Government Comprehensive Plan (LGCP).** Chapter 163, F.S., addresses the primary land planning requirements for all Florida's local governments. It contains the Department's responsibilities for reviewing these documents. The most common Department reviews are Local Government Comprehensive Plan (LGCP) amendments, particularly those initiated by prospective developments in the form of Future Land-Use Change Maps change requests, and/or DRI amendments. The Department also reviews the Capital Improvement and Transportation elements of LGCPs. Local government comprehensive planning requirements are outlined in Rule Chapter 9J-5, F.A.C.
- **Bicycle/Pedestrian Studies.** The primary function of the FIHS is to provide for high-speed and high-volume traffic movement. The safe movement of bicycles and pedestrians must be carefully considered and accommodated so that there will be no adverse impact on vehicular safety, capacity or speed. To accommodate bicycle and pedestrian traffic on roads intended for high-speed, high-volume vehicular traffic requires a careful balancing. Meeting the needs of all three modes is the objective. Separate, offsite, and/or parallel facilities shall be used where practical and feasible. Facilities shall be consistent with the



requirements of the *Florida Bicycle Facilities Planning and Design Handbook* and the *Florida Pedestrian Facilities Planning and Design Handbook*, found on the [Bicycle and Pedestrian Standards](#) web page.

Development of a Coordination Plan

At the outset of a planning study, the Project Manager should develop a Coordination Plan identifying the agencies and entities that will be involved in the study. The Project Manager determines the nature and intensity of coordination efforts and the forum and other logistics of coordination with each entity. Specific contact people should be identified within each organization. Critical components of the Coordination Plan are also included in the project Schedule and Public Involvement Plans, as appropriate. Below is a list of groups and agencies that may be involved in a planning project.

- Federal Highway Administration (FHWA)
- Other federal agencies if needed, such as U.S .Army Corps of Engineers or the Environmental Protection Agency
- County and local governments
- Metropolitan planning organizations
- Regional planning councils
- Other FDOT districts
- Turnpike Enterprise
- Expressway authorities
- Other state agencies, such as Departments of Environmental Protection or Community Affairs
- Environmental or preservation groups
- Citizen or homeowner groups
- Business groups, such as, Chambers of Commerce and Economic Development Boards

The Project Manager must determine what groups should be involved in the project and then develop a plan to include these parties. Figure 15-1 is a matrix of the typical project types and agency coordination requirements:

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Figure 15.1 - Agency Coordination Matrix

| Project Type | City/County | MPO/ RPC | State Agency | Federal Agency | Public Involvement | Public Hearing |
|---|-------------|-------------|-----------------|-------------------|-----------------------|-------------------|
| Area Study | ● | ● | ■ | | ● | ■ |
| LRTP ¹ | ● | ● | ● | | ● | ● |
| Transportation Modeling | ● | ● | ■ | | | |
| Corridor Study | ● | ● | ■ | ■ | ■ | |
| Public Transportation | ● | ● | ■ | ■ | | |
| Multi-Modal | ● | ● | ■ | ■ | | |
| Development Reviews | ● | ● | ● | ■ | | |
| IMR/IJR ² | ● | ● | ● | ■ | ■ | |
| FIHS ³ Master Plans/ Action Plans | ● | ● | ■ | ● | ● | ■ |
| LOS Study | ● | ● | ■ | ■ | | |
| Access Mgmt Plans | ● | ● | ● | | ■ | ■ |
| SIS ⁴ | ● | ● | ● | ■ | ■ | ■ |
| Comprehensive Plans | ● | ● | ● | | ■ | ■ |
| Bicycle/Pedestrian Studies | ● | ● | ■ | ■ | ■ | ■ |

Legend:

● - Required coordination

■ - Potential coordination

¹ Long Range Transportation Plan

² Interchange Modification Report / Interchange Justification Report - coordination and approval by FHWA required for Interstate Projects

³ Florida Intrastate Highway System

⁴ Strategic Intermodal System

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The LRE system
estimates
construction costs
of conceptual
plans.

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Public Involvement

There are several techniques that the Project Manager may employ to effectively involve the public in planning projects. Among them are: graphic presentations, small group meetings, advisory committees, community events, newsletters, open-house workshops and websites. The Office of Policy Planning has many ready-reference materials available related to public involvement and public hearings.

Public Policy/Local Support. It is imperative to gain local support for the smooth progress of any planned project. More and more the public demands accountability for use of its tax dollars and wants to be informed of any plans affecting their daily lives. Transportation issues are always at or near the top of public opinion polls in terms of issues significantly affecting people's lives. It is essential to win local governance support in developing and promoting public policy. Much of the debate surrounding public policy development for transportation occurs at the local level.

Application/Project Complexity. Exactly which communications techniques will be used to involve the public depends on the project complexity. Smaller projects, such as intersection improvements and signal installation or removal, require a level of coordination that may involve only the businesses/residences in the localized vicinity over a short period of time. Large scale projects, such as mile-long segments for road widening, require intense activity from the earliest planning stage all the way through construction.

Documentation/Commitment Tracking. Key to this process is ensuring that any commitment made during the planning process from concept initiation through PD&E is followed through. Documentation of commitments made through the public involvement process is essential. Sources of documentation of both commitments and follow-through include the full text of relevant reports and meeting notes, but, more importantly, executive summaries of all pertinent documents.

Other Coordination. The general public and local governments are not the only groups involved in this process. It is important to remember that external agencies such as the U.S. Army Corps of Engineers, Department of Environmental Protection, Water Management Districts, Federal Highway Administration, and other state and federal agencies serve critical roles in the development of public policy and permitting.

Long Range Estimates

A solid long-range estimate is essential to ensure reasonable budgets are prepared that reflect the true cost of a project. [**Procedure No. 600-010-005, Documentation of the Five Year Work Program Construction Cost Estimates**](#), describes the Long Range Estimates (LRE) process. The LRE computer system is used to estimate the costs of highways, bridges and related projects that are in the conceptual and early planning stages before actual plan quantities are available. This process is currently undergoing revision. Information about the new [LRE](#) process and training opportunities can be found at the Estimates Office website. Planned projects must be estimated accurately and then matched to anticipated revenue. Detailed information on revenue forecasting is found in the Department's [Revenue Forecast Handbook](#).

Programming/Work Program

Section 339.135, F.S., authorizes and sets the guidelines for the Department to develop a State Transportation Five-Year Work Program. This document is a statewide project specif-



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Long Range Plans must:

- Preserve existing infrastructure
- Enhance economic competitiveness
- Ensure mobility

ic list of transportation activities and improvements that must meet the objectives and priorities of the FTP. To build the Five-Year Work Program, the Department coordinates with its seven district offices, the Turnpike Enterprise Office (Turnpike), MPOs and local governments. The intent of the Work Program is to maximize the Department's production and service capabilities through innovative use of resources, increased productivity, reduced cost, strengthened organizational effectiveness and efficiency. This nine-month effort is defined in the Work Program Instructions. It begins in September and ends when the Secretary adopts the new Five-Year Work Program at the end of June. Each district adjusts the first four years of its work program and adds a new fifth year through the gaming process. The Work Program is reviewed by the Florida Transportation Commission and the Department of Community Affairs to ensure compliance with applicable state laws and procedures.

Details of Programming and Work Program management are described in Chapter 8 and at the [Program Development Office](#) website.

Long Range Planning

One component of the Florida Transportation Plan defines the state's long range transportation goals and objectives, which are to be accomplished over a period of at least 20 years. They must fall within the guidelines of the State Comprehensive Plan and any other statutory mandates and authorizations. The goals and objectives must be based on these principles: preserving the existing transportation infrastructure, enhancing Florida's economic competitiveness and improving travel choices to ensure mobility. The Florida Transportation Plan shall consider the needs of the entire state transportation system and examine the use of all modes of transportation to meet such needs effectively and efficiently.

The Department must examine criteria listed in Subsection 334.046(1), F.S., and implement its findings as planning goals and long-range objectives are determined. This long range component of the FTP must be developed in cooperation with the metropolitan planning organizations and reconciled, to the maximum extent feasible, with the long range plans developed by metropolitan planning organizations pursuant to Section 339.175, F.S. In addition, the plan must be developed in consultation with affected local officials in non-metropolitan areas and with any affected Indian tribal governments. The plan must provide an examination of transportation issues likely to arise during the next 20 years. The long range component shall be updated at least once every five years or more often if necessary to reflect substantive changes to federal or state law.

The Department establishes a major work group that is responsible for long range (greater than 10 years) planning. The primary function of this work group is to plan for future transportation on state roadways that will support economic growth and vitality in the state. The Department also provides support to local agencies and jurisdictions by providing technical expertise to assist their long range transportation planning efforts. Specific study types that might be conducted include: LRTPs, Area Studies, Public Transportation, Master Plans, Comprehensive Plans, and FIHS/SIS. Several of these study types also have short range goals and objectives. Their main purpose, however, is to develop a long term road map (or game plan) for maintaining and enhancing the state transportation system. The Long Range Planning process that leads to project construction is outlined in the Funnel diagram shown in Figure 15-2.

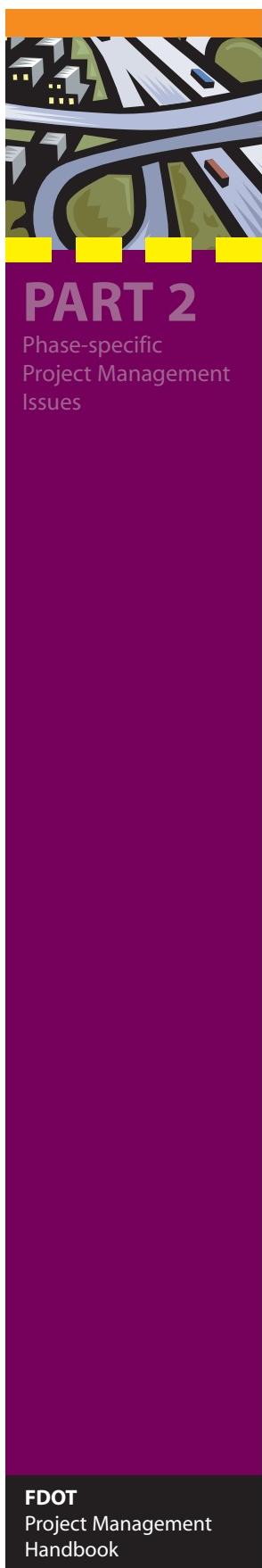
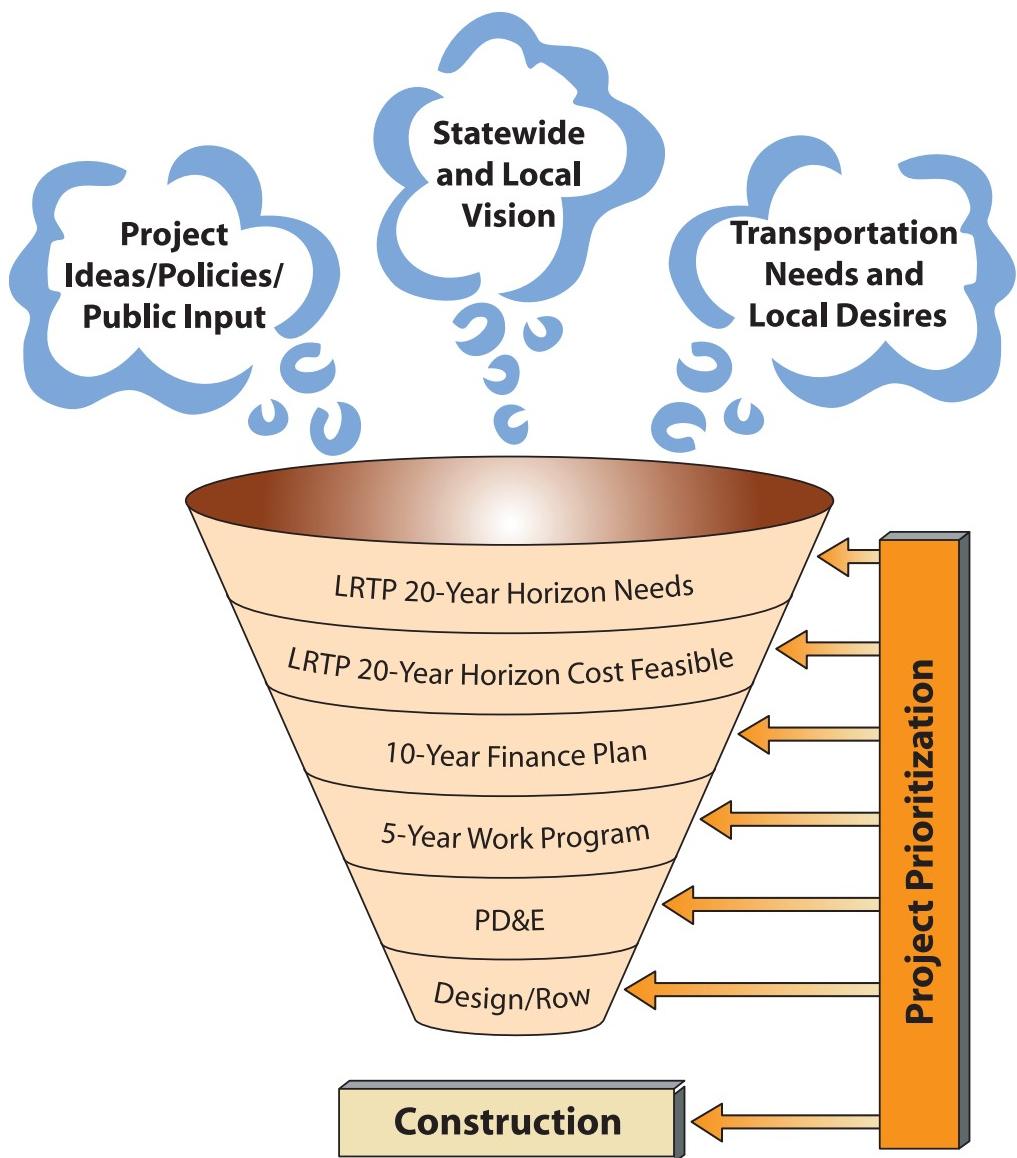


Figure 15-2

Long Range Planning Funnel



The cover features a stylized illustration of a city skyline and roads at the top, followed by a purple vertical bar containing the title and subtitle. A circular icon with a person and the word "INFORMATION" is on the left. Below the purple bar, there is a large white area for notes.

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Three strategic goals:

1. Preserve and manage the system.
2. Enhance economic.
3. Organizational excellence.

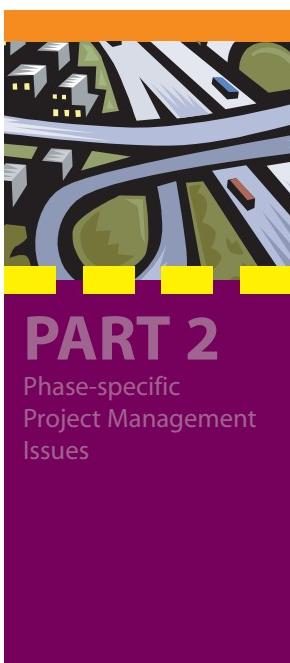
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FTP Short Range Component

The 2002 Short Range Component of the FTP establishes three strategic goals to implement the 2020 FTP. They encompass the following strategic objectives adopted to achieve long range goals of the FTP.

1. Preserve and manage a safe, efficient transportation system.
2. Enhance Florida's economic competitiveness, quality of life and transportation by:
 - *Working with partners to provide mobility choices.*
 - *Focusing state resources on facilities of statewide importance.*
 - *Designing system improvements that are compatible with community plans.*
 - *Strengthening partnerships and seeking earlier resolution of project development issues.*
 - *Working with partners to reduce transportation-related fatalities and improve transportation safety.*
3. Pursue organizational excellence as FDOT carries out its responsibilities including satisfying customers, delivering the work program and strengthening the effectiveness of the Department.

More detailed information on the relationships among 2020 [Florida Transportation Plan](#) goals and long range objectives, short range objectives, focus areas, lead programs and measures is available on the Office of Policy Planning website.



Concept Planning

This functional area of planning involves a range of short term and corridor-specific projects. These projects are oriented to the specific needs of the state roadway system and involve corridor and pre-Project Development and Environment (PD&E)-level efforts. Types of projects are: corridor or specific arterial studies, access management studies, IJR/IMRs, level of service studies and FIHS plans.

These projects require significant data collection and analysis to ensure that adequate and appropriate improvement concepts or action plans are produced. The Project Manager must focus early coordination efforts on public entities and agencies and the general public to gather a full range of data including planning data sets, traffic and roadway characteristics, environmental, archaeological, and other area information, resources and concerns.

The following matrix shows project types and what information and coordination will be relevant in conducting each type.

Figure 15-3
Study Needs Matrix

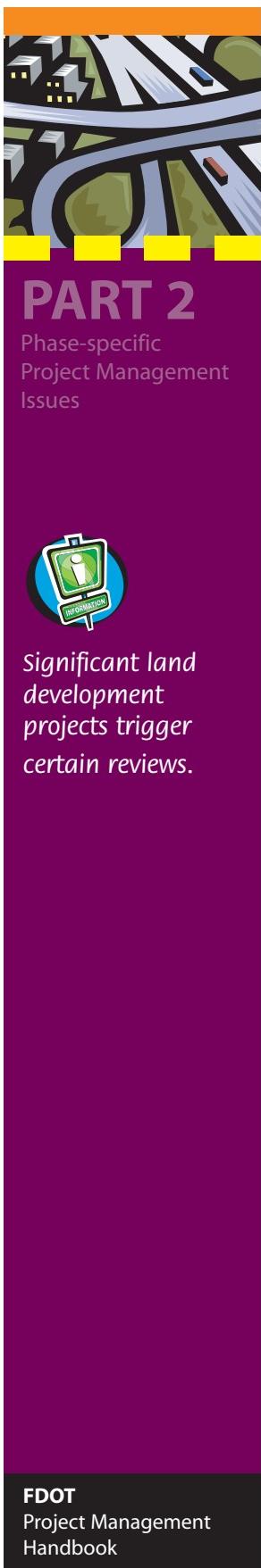
| Project Type | Traffic and Roadway Data | Land Use Data | Environmental Data | Archaeological/Historic/Social Data | Public Involvement | Detailed Alternatives Analysis | Public Hearing |
|--------------------------------|--------------------------|---------------|--------------------|-------------------------------------|--------------------|--------------------------------|----------------|
| Corridor Study | ● | ● | ■ | ■ | ● | ● | |
| Pre-PD&E Study | ● | ● | ● | ● | ● | ● | |
| Access Mgmt Study | ● | ● | | | ● | | |
| IMR/IJR | ● | ● | ● | ● | ■ | ● | |
| LOS Analysis | ● | ● | | | | ● | |
| FIHS Master Plans/Action Plans | ● | | ● | ● | ● | ● | ■ |

Legend

● = Need

■ = Potential need

Concept-level planning can be viewed as the preparation and fatal-flaw screening mechanism to produce a "clean" project ready for project development and entry into the work program cycle. Enough investigation and analysis is needed to screen the corridor or interchange area to obtain needed approvals or recommendations for advancement to more detailed study. As with long range planning efforts, much coordination is needed to successfully navigate the development of specific recommendations and appropriate next steps. Coordination for these study types has been described earlier in this chapter.



Development/Project Reviews

The following projects fall under the umbrella of development or project reviews when the Planning Project Manager is coordinating with or through another agency to provide reviews of potential impacts to the State Highway System (SHS). These review efforts occur when significant new land development projects are under way. An overview of major reviews is provided below. Discussion of IJRs, IMRs and Interchange Operational Analysis Reports (IOARs) is included to ensure that the analyses and recommendations in the DRI or the Site Plan development process are consistent with data represented in the reviews, studies or reports.

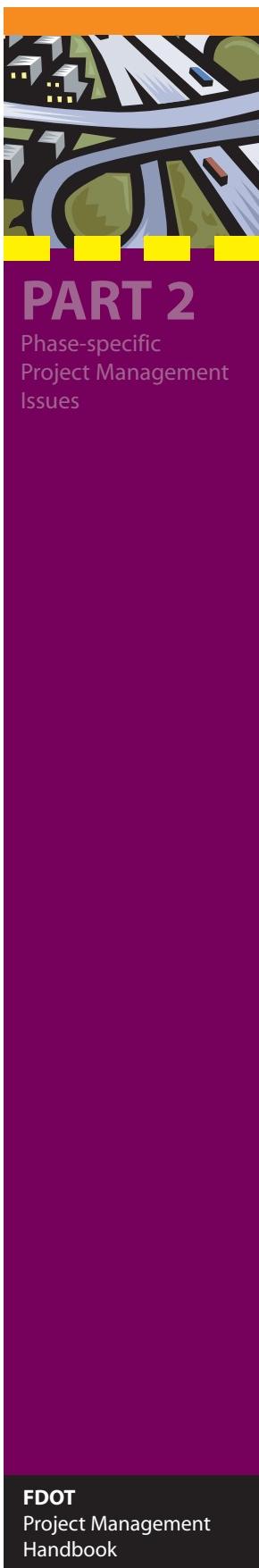
Development of Regional Impact (DRI). This site impact study represents any effort by the Department to prepare an analysis or conduct a review of an analysis prepared by another party. The purpose of the analysis is to estimate and quantify the specific transportation-related impact of a development proposal on the surrounding transportation network, regardless of who initiates the development proposal. The Department's impact assessment may be limited to the State Highway System or to any affected roadway system as determined by the specific type of review being conducted.

Interchange Modification Report (IMR). This report is required for all requests for a modification to an existing and/or approved but not yet constructed interchange on FIHS limited-access facilities. An Interchange Proposal must be developed and approved even if the proposed interchange is contained in a DRI Master Plan or PD&E study for the facility.

Interchange Justification Report (IJR). This report is required for all requests for a new interchange on existing FIHS limited-access facilities. An Interchange Proposal must be developed and approved even if the proposed interchange is contained in a DRI Master Plan or PD&E study for the facility.

Interchange Operation Analysis Report (IOAR). This report may be required by FDOT or FHWA to analyze specific improvements of an interchange modification where the IMR is not required or to determine the specific year a proposed improvement to an interchange or facility is needed.

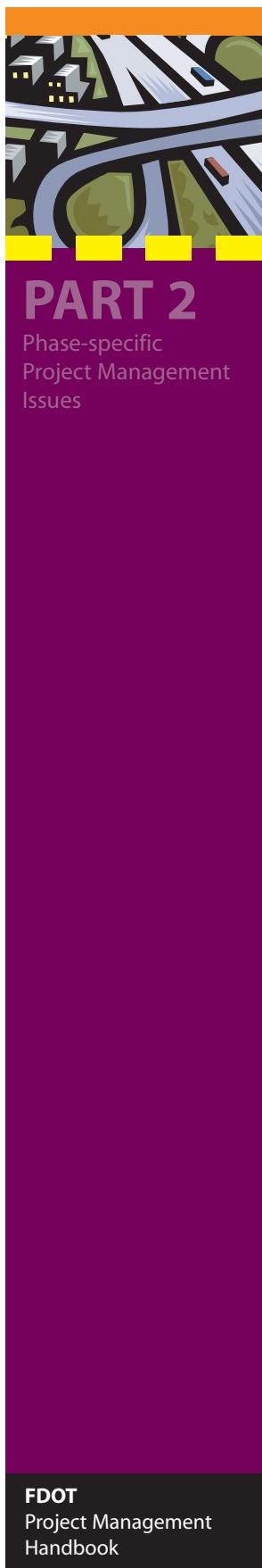
Florida Quality Development (FQD). This expedited DRI allows an alternative, expeditious, and timely review process for DRIs that have been thoughtfully planned, take into consideration the protection of Florida's natural amenities, consider the cost to local government of providing services to a growing community and address the high quality of life Floridians desire.



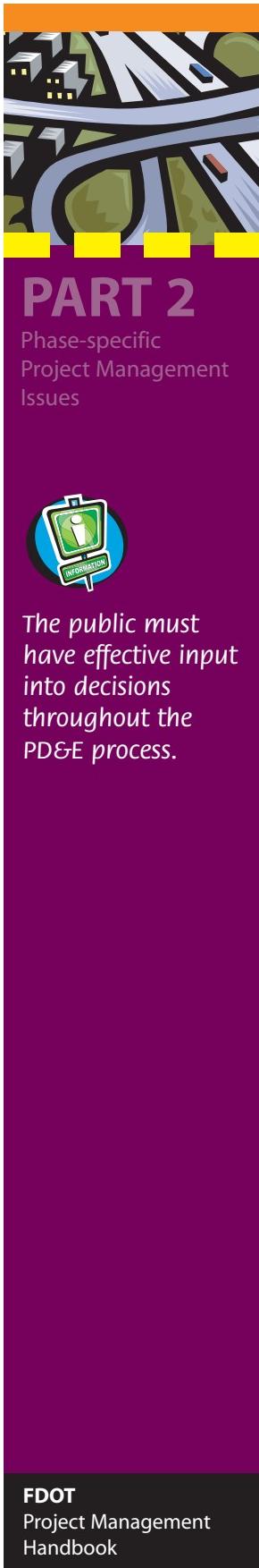
Internet References

Internet references cited in the chapter are linked directly in the text or can be found below.

- The [Planning Office](#) web-site.
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Planning*
- The [Site Impact Handbook](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Planning*
 4. *Publications and Maps*
 5. *Site Impact Handbook*
- Procedure No. 525-030-160, [Interchange Justification](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Procedure 525-030-160*
- [Interchange Handbook](#) and associated training materials.
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Planning*
 4. *Offices-Systems Planning*
 5. *Systems Management*
 6. *Interchange Justification*
- Procedure No. 525-030-250, [Development of the Florida Intrastate Highway System](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Procedure 525-030-250*
- [Roadway Level of Service Handbook](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Planning*
 4. *Publications and Maps*
 5. *Quality/ Level of Service Handbook*
- [Access Management](#) Page
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Planning*
 4. *Offices -- Systems Planning*



5. Systems Management
 6. Access Management
- Florida Bicycle Facilities Planning and Design Handbook and the Florida Pedestrian Facilities Planning and Design Handbook, the [Bicycle and Pedestrian Standards Page](#)
 1. <http://www.dot.state.fl.us/>
 2. Doing Business with FDOT
 3. Safety Office
 4. Pedestrian/ Bicycle Safety
 5. Florida Policy and Standards
 - Procedure No. 600-010-005, [Documentation of the Five Year Work Program Construction Cost Estimates](#)
 1. <http://www.dot.state.fl.us/>
 2. Doing Business with FDOT
 3. Policies, Procedures, Forms and Manuals
 4. Procedures by Number
 5. Procedure 600-010-005
 - The new [LRE](#) process.
 1. <http://www.dot.state.fl.us/>
 2. Doing Business with FDOT
 3. Estimates Office
 - [Revenue Forecast Handbook](#)
 1. <http://www.dot.state.fl.us/>
 2. Doing Business with FDOT
 3. Planning
 4. Publications and Maps
 5. Revenue Forecast Handbook
 - [Program Development Office](#)
 1. <http://www.dot.state.fl.us/>
 2. Doing Business with FDOT
 3. Program Development Office
 - 2020 [Florida Transportation Plan](#)
 1. <http://www.dot.state.fl.us/>
 2. Doing Business with FDOT
 3. Office of Policy Planning



CHAPTER 16

Project Development and Environment (PD&E)

Project Management

The Project Development and Environment (PD&E) process is described in **Procedure 650-000-001, *Project Development and Environment Manual***. This process has been authorized by Florida Statute to comply with the requirements of the National Environmental Policy Act (NEPA) and other related federal and state laws, rules and regulations. Although the emphasis of this chapter is on federal-aid projects, there are also environmental reporting requirements for non-federally funded projects. [Part I, Chapter 13](#) of the **PD&E Manual** should be used as a reference for these projects.

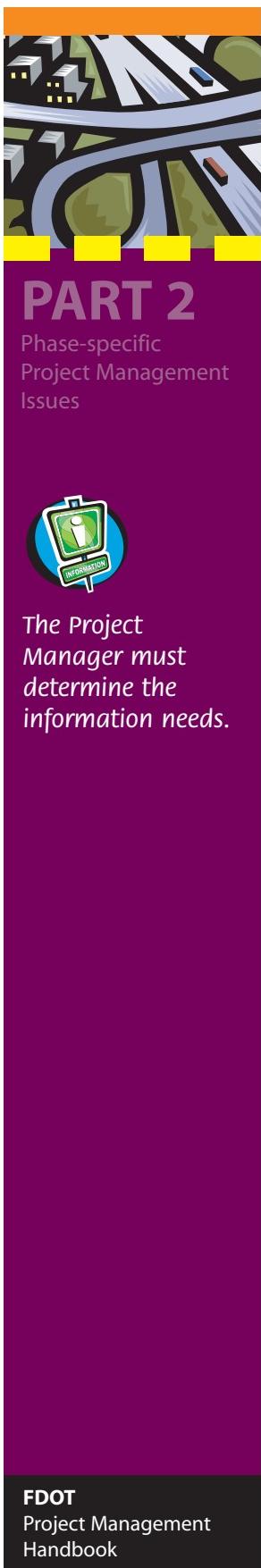
The objective of this chapter is to assist the Project Manager (PM) in navigating through the PD&E study process from initiation through completion of a project. The intent is not to replicate the detailed information provided within the **PD&E Manual** but to direct the PM to the applicable sections in a logical, efficient manner. A flow chart depicting the PD&E process is found following the references at the end of this chapter.

PD&E Projects

PD&E projects can be long and complex undertakings. The objectives of a PD&E project are to perform necessary social, environmental and engineering studies of a proposed transportation improvement to support decisions concerning if and where it should be built and what will be the basic design concepts. Throughout this process, it is essential that the public have effective input into these decisions. The public includes individual citizens as well as state and federal agencies, permitting agencies, neighborhood associations, businesses, and environmental and other interest groups. The products of a PD&E project are the reports of findings and recommendations, appropriate environmental documents and preliminary engineering concepts. The engineering included in a PD&E project varies depending on schedule, funding and required study. This engineering component might result in a level of detail comparable to design plans up to Phase I (30%) plans.

Typical tasks accomplished in a PD&E project include the following:

1. Data collection
2. Identification of project needs
3. Class of action determination
4. Development of alternatives
5. Environmental analysis
6. Public involvement
7. Coordination
8. Evaluation and selection of alternatives
9. Documentation



Data Collection

The data collection phase is not a well-defined activity. On most projects this activity will actually start well before the execution of the consultant contract—during the development of the project concept report. This activity will often continue until after the public hearing when comments from the public are addressed. However, for the purpose of this chapter, the discussion will primarily address the data-collection activities that are required to determine the project need and the development of alternatives. The following are some of the engineering data that may be collected:

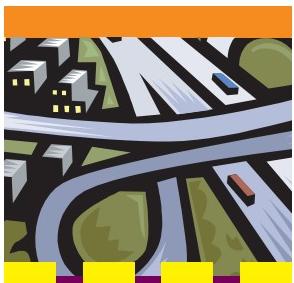
- Existing roadway plans
- Straight-line diagrams
- Right of way maps
- Crash data
- Functional classification and posted speed limit
- Pedestrian or bicycle facilities
- Lighting and traffic signalization
- Utility locations, existing and planned
- Transit and rail operations, existing and planned along the corridor
- Soils and geotechnical data
- Condition of existing pavement
- Existing and projected traffic volumes
- Drainage maps and features
- Access management and median openings
- Current aerial photography

If the project involves an existing bridge, the following information might also be collected:

- Type of structure, and structure plans
- Structural condition and rating
- Horizontal and vertical clearance
- Span arrangement, number and length
- Historical significance

If a bridge on the project crosses a waterway, the following information may also be collected:

- Channel data, alignment, width, depth and required clearance
- Boat traffic survey (size and type of watercraft)
- Number of openings for movable structures
- Ship impact data



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There are two types of needs: area-wide and corridor specific.

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The following environmental data should be collected:

- Existing and proposed land uses
- Cultural features and community services
- Archaeological and historic features
- Natural and biological features
- Known contamination sites
- Existing noise (isopleth) studies
- Socio/economic information
- Community values, views and opinions regarding the project and area

The information listed above is not meant to be all-inclusive. Some projects may require additional information. It is the Project Manager's responsibility to determine what information or data needs to be collected. This determination should be conducted with the project team to ensure that all areas of concern are addressed. For a more detailed discussion of data collection and needed information, see the specific chapter for each technical topic in the **PD&E Manual**.

Once the initial data collection has been conducted and there has been an analysis as to the need for additional corridors to be studied, an Advance Notification Package is sent out to state, federal and local agencies requesting information about the project. The Advance Notification Package is discussed in [Part I, Chapter 2](#) of the **PD&E Manual**. The responses from the Advance Notification will help direct the Department to determine the appropriate Class of Action and the environmental analysis, both of which will be discussed later in this chapter.

Identification of Project Needs

The project planning phase identifies the need for a project so that it can be advanced to the PD&E phase. The PD&E phase must clearly establish, verify and thoroughly document the need. Need will directly affect what alternatives will be evaluated and serve as justification for the project. Because there are often multiple deficiencies or desires, there are often multiple needs. These needs can be separated into two categories: area-wide needs and project corridor needs. Area-wide needs relate to system deficiencies and local government or community desires. Project corridor needs relate to route deficiencies and specific community desires within a corridor. These needs are explained in more detail in subsequent sections of this chapter.

Project needs should be identified in the Long Range Transportation Improvement Plan (LRTP) and, ideally, the Transportation Improvement Program (TIP). Projects must be consistent with local comprehensive plans. Meetings with local government officials, business communities and the public are valuable in verifying needs.

For project corridor-specific needs, a review of Florida Department of Transportation (FDOT) databases and/or specialized analyses may be required to determine deficiencies. Corridor-specific needs may include deficiencies of the existing facility, the need for additional capacity and the safety of the existing facility. Project needs are discussed in detail in [Part II, Chapter 5](#) of the **PD&E Manual**.

If a new or revised interchange is required, an Interchange Justification Report (IJR) or Interchange Modification Report (IMR) will be required. These are normally produced in

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Environmental classifications of Action are:

- Categorical Exclusion
- Environmental assessment
- Environmental Impact Assessment

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the planning phase of a project, but they may be a PD&E requirement. Technical and administrative procedures for interchange justification/modification are found in **Procedure 525-030-160, Interchange Justification**, and described in the **Interchange Handbook** and associated training materials.

Non-Federally Funded Projects

A State Environmental Impact Report (SEIR) may be required for certain non-federally funded projects. [Part I, Chapter 13](#) of the **PD&E Manual** explains procedures to be followed with non-federally funded projects. An SEIR is required if the project is a major transportation project using non-federal funds, and one of the following conditions is met:

- The project is part of the State Highway System.
- The project is a toll project.
- The project is privately funded.

Projects that do not meet one of these criteria, even though major, will not be required to process an SEIR. Major projects are generally defined as having one or more of the following characteristics:

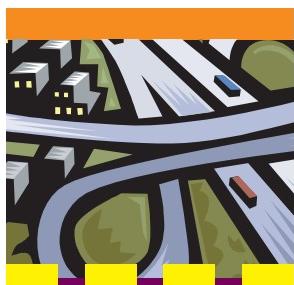
- A new freeway or expressway.
- A highway providing new access to an area that could substantially change land use or development patterns.
- A new or reconstructed arterial highway that could substantially increase capacity, or change land-use or development patterns.
- A new circumferential or belt highway that bypasses a community.
- Added interchanges to a completed freeway or expressway.
- A new bridge that provides new access to an area.

When it is determined that a project is not a major type, a designation of Non-Major State Action (NMSA) is assigned. The NMSA does not require a public hearing but may require public involvement activities. Projects meeting the NMSA criteria are excluded from the SEIR process.

Class of Action Determination

When the project team has completed an evaluation of project needs, it will be able to develop project concepts (types of facilities, number of lanes, interchanges and intersections, structures, and so forth) that will address identified needs. These concepts will become the basis for project alternatives that will be studied further.

The Class of Action Determination is based on these strategies, the Advance Notification responses and the project management team's understanding of the project and its environment. This process is defined in [Part I, Chapter 3](#) of the **PD&E Manual**. The process is broadly defined as the consultation with the lead federal agency to identify the appropriate level of environmental documentation necessary to complete the National Environmental Policy Act (NEPA) process. In most cases the lead federal agency will be the Federal Highway Administration (FHWA); however, other agencies can also lead a transportation study. Examples are the Federal Transit Administration (FTA) and the U.S.



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An EIS is for projects that will have a significant impact on the environment.

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Coast Guard (USCG). NEPA requires that environmental information be made available to public officials and citizens before decisions are made and before actions are taken.

Federally funded projects are classified as either:

- **Categorical Exclusion (CE).** This classification is for projects that do not individually or cumulatively have a significant impact on the social, physical or natural environment. These projects are exempt from the requirements of NEPA. However, they still must meet all other federal requirements and executive orders. Categorical Exclusions (CEs) are processed as one of three types: Type 1, Programmatic, and Type 2. Type 1 and Programmatic CEs are typically identified as minor projects. [Part I, Chapter 3](#) of the **PD&E Manual** has a list of typical minor projects. A major project that is determined not to have any significant impacts is a Type 2 CE. Any Type 2 CE requires environmental analysis comparable to that required for an environmental assessment in order to support the determination that there is no significant impact.
- **Environmental Assessment (EA).** This document may be required when the significance of any environmental impact has not been clearly established. If a project is clearly not a CE or an Environmental Impact Statement (EIS), the project may need to be processed as an EA.
- **Environmental Impact Statement (EIS).** This classification involves projects that will have a significant impact on the social, physical, or natural environment as defined by NEPA and Part 40, Section 1502, Code of Federal Regulations (C.F.R.).

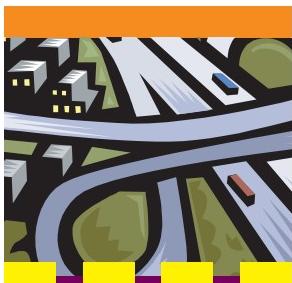
The PD&E Process Flowchart, Figure 16-1, illustrates that the Class of Action Determination is submitted after needs have been established, Advance Notification has been sent, alternatives have been identified and public involvement has begun. For projects determined to be an EA or EIS, the Project Manager will prepare an Environmental Class of Action Determination and submit it to the FHWA. The FHWA may require additional information, or they may concur with the recommendation.

For projects that are determined to be Type 2 CEs, the Environmental Class of Action Determination will serve as the decision-making document. That is why the Environmental Determination for Type 2 CEs and any other supporting documents requested by the FHWA are usually sent with the completed Preliminary Engineering Report and the Public Hearing Transcript. There is, however, an option to submit the documentation prior to conducting the Public Hearing.

It is the Project Manager's responsibility to ensure that the appropriate staff members are included during coordination with the FHWA. The Project Manager is also responsible for quality control of the environmental determination documentation. He/She must make sure that the process presented in [Part I, Chapter 3](#) of the **PD&E Manual** has been followed.

Development of Alternatives

There is no set number of alternatives that are required for a PD&E study. The regulations of the Council on Environmental Quality (CEQ) require that the Project Manager "rigorously explore and objectively evaluate all reasonable alternatives." Generally, a PD&E study will include the following alternatives:



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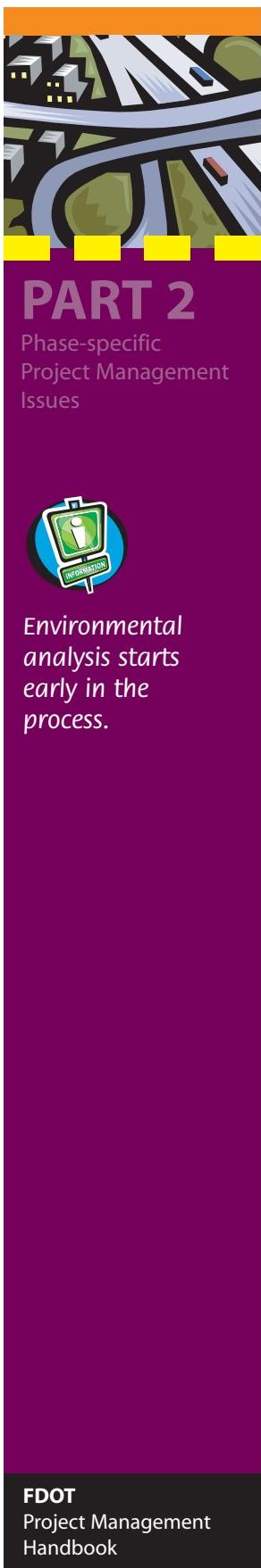
Context Sensitive
Solutions take into
account
community values
and vision.

- **The No-Build Alternative.** This alternative is the existing system with any improvements already programmed that are not specifically tied to the new project. The no-build alternative is considered a viable alternative through the public hearing.
- **The Transportation System Management (TSM) Alternative.** This alternative consists of those minor improvements that would maximize the efficiency of the existing facility. This alternative may include safety improvements, access management and signalization.
- **Transit Alternative.** This alternative, in most cases, is incorporated with other alternatives, such as the TSM or a construction alternative. It addresses the potential to reduce traffic by increasing use of an alternate mode of transportation.
- **Construction Alternatives.** These alternatives require reconstruction or widening of the existing facility or building a new facility on a new location. Usually more than one construction alternative is developed.
- **Context Sensitive Solutions.** In the development of the construction alternatives, the project manager should consider the issues and surroundings associated with the project. Project alternatives need to improve transportation; but they should also, if applicable, enhance the community by maintaining its scenic or historic values, or fit within the vision of the community. Deviations from the Department standards might be appropriate in order to design an alternative that meets the community values or to avoid or minimize social or environmental impacts. These deviations may require design variances or exceptions. They need to be discussed with, and approved by the district Design Engineer.

The Project Manager must develop each alternative until an objective evaluation of its cost and impact are addressed. The level of development depends on the alternatives under consideration. In some cases, a simple concept may be all that is necessary to compare the alternatives. Some cases, on the other hand, may require a high level of detail. In all cases, the analysis of each alternative need must address the following:

- Cost, which includes engineering, right of way, relocation, environmental mitigation, utility relocation, construction, and construction engineering and inspection costs.
- Right of way involvement, which includes drainage requirements and easements.
- Number of relocations, both residential and business.
- Impact to any special, unique, natural, historic or otherwise significant feature.
- Potential for Section 4(f) involvement (see discussion below).
- Assessment of community impacts.
- Summary of environmental impact.
- Discussion of how each alternative addresses the project needs.

It is the Project Manager's responsibility to ensure that all reasonable alternatives have been studied and that dismissal of other alternatives has been justified. The Project



Manager must ensure that the development of alternatives is consistent with [Part II](#), [Chapter 6](#) of the **PD&E Manual**.

Section 4(f)

The policy of the Federal Highway Administration is that highway improvements should avoid public parks, recreation areas, refuges and historic sites. "Section 4(f)" refers to a section of the U.S. Department of Transportation Act of 1966, which first established this policy. Although the section number of the U.S. Code of Federal Regulations has changed over the years, the policy is still known as "Section 4(f)." This policy does not prohibit the taking of public lands, but it must be demonstrated that there is no feasible alternative. The FHWA website on [Section 4\(f\)](#) contains useful information on Federal requirements and documentation required concerning this topic.

Environmental Analysis

The environmental analysis for the project will start early in the process. During the data collection and also during the review of the advance notification responses, the project team should be using accumulated information to develop alternatives.

Once the project alternatives have been developed, a thorough environmental analysis of each alternative should be performed. The analysis differs for each type of impact. Some environmental analyses may only require simple consultation if the analyst is knowledgeable about the project. Other impact analyses will use measures such as field-testing and computer simulations.

Although the analysis may be of a quantitative or qualitative nature, the environmental impacts are evaluated for level of significance. For a more detailed discussion of the level of analysis for environmental impacts, see Part II of the **PD&E Manual**.

It is the Project Manager's responsibility to coordinate with the environmental specialists throughout the environmental analysis. While the Project Manager may not be the one responsible for the actual analysis or documentation, she/he is responsible for ensuring that these analyses are conducted and documented according to the procedures outlined in the **PD&E Manual**.

Public Involvement

Public involvement is an essential and critical element of project development. The NEPA process requires extensive involvement, coordination and communication with all relevant and affected parties: the general public, community groups, environmental organizations, and local, state and federal agencies. The Environmental Management Office of the Department of Transportation has developed a [Public Involvement Handbook](#) to assist the Project Manager in developing and conducting an appropriate Public Involvement Plan for transportation projects.

Public Involvement Plan. Each PD&E project must have a public involvement plan. At a minimum, the plan should discuss:

- Identification of the concerned public and project stakeholders.
- Public notification techniques.
- Use of meetings and workshops.



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Public meetings:

- Open house style
- Convenient time and location
- High-quality graphics
- Knowledgeable project staff available
- Document input

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- The formal Public Hearing.
- Any follow-up dissemination of information.

The level and extent of public involvement can vary considerably with different PD&E projects depending on the complexity of the project, the character of the communities impacted and the anticipated public concerns. The Project Manager is expected to be innovative. Public involvement should be proactive so that a true public consensus can be reached on these issues: whether or not to build the improvement, the location and the basic design concepts.

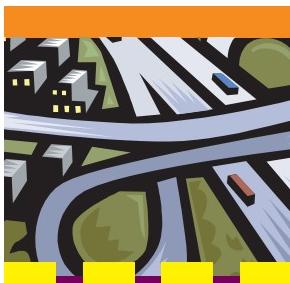
Ideally, this consensus should reflect the views of the stakeholders in a project. Stakeholders might include those who may benefit from the project, those who will be adversely impacted and the community at large. Organizations, groups and agencies are frequently stakeholders. Examples may include business associations, homeowners associations, environmental groups, developers and local agencies. The Project Manager should seek to identify all legitimate stakeholders, understand their individual concerns and objectives, and work to keep them informed and involved in the project development process.

Building consensus is a challenging task. It frequently will require much more than simply advertising and holding public meetings. Other communication and interaction techniques that have proved useful include the following:

- Newsletters
- Websites
- Advisory committees
- Informal neighborhood meetings in homes
- Presentations at civic and business associations
- Presentations before local government boards (county commissions, city councils, MPOs, and so forth)
- Attendance at community events.

Throughout this process, the Project Manager must remember that the goal is to obtain input from the public, not to "sell" a project. It is essential that he/she listen with an open mind, investigate and address concerns, and be willing to alter concepts when worthwhile ideas surface.

Public Meetings. Public meetings are an important part of the public involvement plan. Usually public meetings are held at two stages of the project. Prior to the development of project alternatives, the Project Manager may conduct public meetings to obtain input on existing conditions and the need for a project. These meetings are part of the data-collection process. Other meetings may occur after the development of alternatives. The Project Manager is then in a position to discuss each alternative and its benefits and consequences. Most projects will have at least one alternatives public meeting. More meetings may be held, depending on the complexity of the project. It is at these meetings that the public will have an opportunity to express their opinions of alternatives that are presented. Many times modifications to the preferred alternative will be developed as a result of this process. Many less formal, small-group meetings with stakeholder organizations may be needed throughout the life of the project.



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The PM should:

- Identify all legitimate stakeholders
- Understand their concerns and objectives
- Keep them informed and involved.

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The Project Manager is responsible for notifying the affected public of these meetings and developing a meeting format that is conducive to obtaining the public's opinion and views. Public meetings are usually informal events. Generally, formal presentations and public comments are not part of public meetings. The open-house style meeting has proved effective for public meetings. It is held at a public location (such as a school or church) convenient for the public and close to the project site. The meeting should be conducted over a period of several hours, usually from mid-afternoon to early evening to allow citizens to stop by at their convenience without seriously interrupting work or child-care activities.

Mondays and Fridays are usually not good meeting days because of their proximity to the weekend. Many churches hold Wednesday night services, which may also create a conflict.



Source: FDOT

The "presentation" is arranged as separate stations, each addressing an important aspect of the project. Each station should have appropriate graphics and be staffed by knowledgeable project staff. This method eliminates the centralized meeting forum where a few strong and vocal citizens may

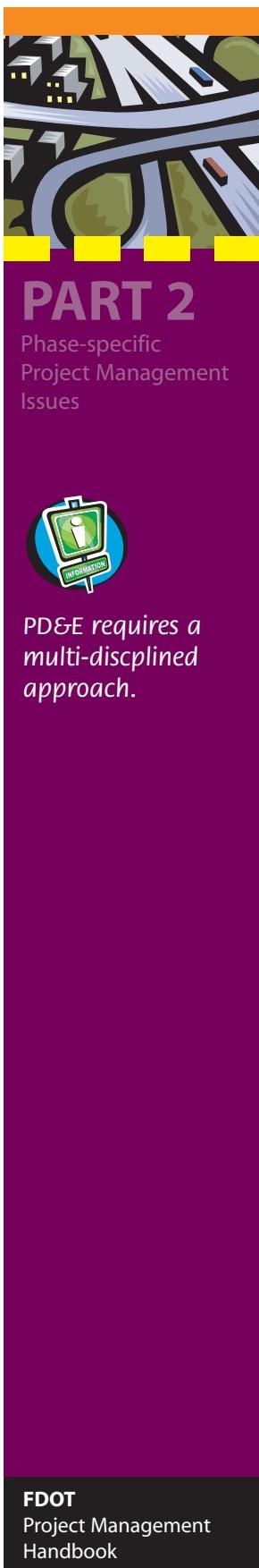
monopolize the meeting and discourage others from providing valuable input. The PM should hold a short meeting prior to the public meeting to ensure that everyone is aware of key issues, responsibilities, the proper response to give to typical questions and instructions for handling problems that may arise.

The use of high-quality graphics prepared with the general public (non-engineer) in mind is an effective communication tool. Aerial photographs and computer-enhanced pictures showing proposed improvements are also very effective. Acronyms or technical terms that participants may not understand should not be used. Key members of the project team must be available at the meeting to explain project issues and answer questions. All team members must know how to respond properly to participant questions and how to interact with the media. Crowd flow should be planned so that new arrivals get an overview of the project and the purpose of the meeting followed by key project information, all in a logical sequence. Professionally prepared videos have proved effective as an introduction to a public meeting.

Participants should be given an opportunity to prepare written comments through the use of prepared comment forms. These forms may be left with the project team or returned later via mail or e-mail. A deadline date for submission of comment forms must be set. A court reporter might be used to record comments if any participant prefers to exercise this option.

The Project Manager is responsible for leading the meeting and documenting both meeting activities and significant discussions that take place. The Project Manager may wish to respond by letter to individuals who provide significant comments, concerns and suggestions. For more information on public meetings, see [Part I, Chapter 8](#) of the **PD&E Manual**.

Public Hearings. When the EA or Draft EIS has been approved and the appropriate time for public comment on the recommended alternative(s) has (have) been reached, a public hearing may be scheduled. If the impact study for a project indicates controversial or other issues, hearings are required. The public hearing notification process and the proce-



dures for conducting the hearing must adhere to the prescribed instructions in [Part I](#), [Chapter 8](#) of the **PD&E Manual**.

The public hearing must be recorded and a verbatim transcript of the proceedings completed. All comments received during the comment period following the hearing will also be made a part of the official transcript. All comments received must be addressed in the summary of the hearing. The summary is included in the transcript.

The Project Manager is responsible for finding an appropriate site to conduct the hearing and providing any necessary presentation materials. The role the Project Manager plays during the hearing varies with each district. However, in all cases, the Project Manager (either FDOT or consultant Project Manager) will be responsible for presenting a description of the project.

Coordination

Project development demands a multi-disciplined approach in developing and analyzing alternatives for transportation projects. No one person has the knowledge to develop or the authority to approve a solution to the complex issues associated with these projects. Throughout the project, the Project Manager must coordinate not only with other federal, state, and local agencies but also with other sections within the Department.

Governmental Coordination. The Advance Notification procedure, as outlined in the **PD&E Manual**, provides an extensive list of local, state and federal contacts. A list of agencies that require continued coordination should be developed. The Advance Notification list is the beginning point for coordination. Some agencies may not desire or need further involvement. Additional agencies may be identified after the Advance Notification. It is critical to the success of the project to continue the coordination begun with Advance Notification throughout the life of the project. The development and review of environmental technical studies and public participation efforts are examples of situations requiring governmental coordination.

Public Coordination. The public involvement process requires extensive coordination. For instance, coordination with homeowners' associations and special interest groups may help identify all stakeholders along the corridor. This type of coordination is part of the Public Involvement process.

Interoffice Coordination. Because no one person has the knowledge to develop all elements of a project alternative, the Project Manager must interact and work with various Department offices. Examples of such coordination with other Departments include Planning, for traffic projections; Structures, for bridges; Drainage, for drainage design; and Right of Way, for right of way estimates. The Project Manager must understand that the alternatives developed must represent a consensus of the Department, not just the views of one office.

Evaluation and Selection of Alternatives

Once the alternatives public meetings have been conducted and the environmental analysis is complete, the project team is in a position to evaluate the alternatives. Evaluation criteria will include, but not be limited to, the following:

- Project Costs (engineering, right of way, construction, construction engineering and inspection, mitigation)



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The PM must study all reasonable alternatives and justify the dismissal of others.



Documentation includes a Preliminary Engineering Report and environmental document.

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- Maintenance of Traffic
- Environmental Impact (noise, air, wetlands, contamination, wildlife, and so forth)
- Socioeconomic Impact (relocations, aesthetics, cultural resources, and so forth)
- Public Sentiment
- Fulfillment of Project Needs

If the criteria information is presented in a matrix format, persons reviewing it will more easily understand how the project team reached its conclusions. For more information on developing an evaluation matrix, see [Part I, Chapter 9](#) of the **PD&E Manual**.

The Project Manager must lead the project team through the evaluation process. In some cases a consensus among the project team is not achieved. It is then the Project Manager's responsibility to determine which alternative to recommend or propose for construction and to fully justify that recommendation. This decision is based on the project team's recommendations together with a subjective and objective review of the evaluation criteria.

The final recommended alternative will be the result of a consensus of the project team, FDOT, FHWA, local officials, the MPO and other appropriate stakeholders.

Documentation

Draft Documents. When the evaluation of alternatives is completed, the Project Manager is ready to prepare the first draft of the Preliminary Engineering Report. This first draft of the report is sent to the district Value Engineer. Then a Value Engineering Study may be conducted for the project.

At this point, the Department may have a recommended alternative identified. This alternative, however, should not be considered the preferred alternative until after the Public Hearing and FHWA approval. The department may wish to carry more than one construction alternative to the Public Hearing. In these cases, the draft reports should indicate which alternatives are being carried forward.

Depending on the class of action determination, the Project Manager may have to prepare an Environmental Assessment (EA) or a Draft Environmental Impact Statement (DEIS). Directions for preparing and processing these documents are given in [Part I, Chapter 4](#) and [Part I, Chapter 6](#) of the **PD&E Manual**.

For a Type 2 CE, the Environmental Determination can be submitted to the FHWA at this point, or the Project Manager may wish to hold the public hearing and submit all information following the hearing. See [Part I, Chapter 3](#) of the PD&E Manual for more information on processing a Type 2 CE.

If the project is a non-federally funded major transportation project, as defined by [Part I, Chapter 13](#) of the **PD&E Manual**, the PM should proceed with the development of the SEIR. If the project has been designated as a NMSA, the completion of a detailed checklist is typically the only documentation that is required.

The Project Manager must ensure that draft environmental documents have been subjected to a comprehensive quality control review. Both the consultant and the districts have quality control plans; the processing of all documents must follow these plans. Documents containing errors or inaccuracies must not be sent to the FHWA or made available to the public.



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The Preliminary Engineering Report is very important for hand-off to design.

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Preliminary Engineering Report. A report on the Public Hearing should incorporate all valid comments received during the comment period. A formal procedure is recommended for documenting comments and responses. It would include recording names and identification of the persons submitting comments, each comment and the response to the comment. When the public hearing is completed and the comment period is over, the Project Manager along with the project team will select a recommended alternative. This alternative is chosen from the alternatives presented at the public hearing. It may include the no-build option.

The recommended alternative will then be developed to a level that allows a clear understanding of impacts and costs. At this point, the final draft of the Preliminary Engineering Report is completed. This final draft will outline a clear understanding of the recommended alternative. Figure 16-1 (at the end of this chapter) illustrates where the draft and final Preliminary Engineering Report should fall in the PD&E process. The report will include, at a minimum, the preferred alignment, typical section, right of way requirements, environmental impact, utility impact and a preliminary maintenance-of-traffic plan. Sections 26.7 and 26.8, Chapter 26, **Plans Preparation Manual**, Volume I, explain the requirements for bridge development and analysis. The report will also include cost estimates for design, right of way, construction, and construction engineering. Districts require different levels of completeness for the plans development during the PD&E phase. This issue should be addressed in the scope of services.

The completed Preliminary Engineering Report also includes a section titled "Commitments and Recommendations." This section summarizes all commitments the Department has made during the PD&E process. Recommendations may also include construction phasing for multi-segment projects. An approved Typical Section Package, prepared in accordance with Chapter 16 of the Department's **Plans Preparation Manual**, is included in the appendix of the report. For more detailed information on the content and format of the Preliminary Engineering Report, see [Part I, Chapter 9](#) of the **PD&E Manual**.

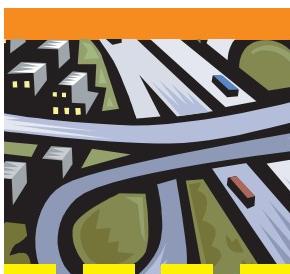
Final Environmental Document. After the comment period following the public hearing ends and comments have been addressed, the final environmental documents are prepared for the selected alternative. Depending on the type of environmental documentation required—Type 2 CE, Finding of No Significant Impact (FONSI) or Final Environmental Impact Statement (FEIS) or Supplemental Environmental Impact Statement (SEIS)—the final draft is prepared. Requirements for and processing of these documents are discussed in Part 1, Chapters 3, 5, and 7 in the **PD&E Manual**.

When the final documents are completed and have gone through the appropriate quality control process, the district Environmental Management Office will submit these reports to the FHWA. After the FHWA comments and/or concurs with the findings, it will approve the environmental document and grant Location and Design Concept Acceptance.

Reevaluation

When changes in a project occur after approval of the original environmental document, a Reevaluation is used to document compliance with federal laws. A reevaluation is necessary:

- Any time during the project development process when a major change has occurred.
- Prior to requesting federal-aid authorization for major production phases.



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The ETDM process should streamline the planning and PD&E process.

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- When more than one year has elapsed since PD&E approval.
- Prior to issuing the FEIS when more than three years have elapsed since approval of the DEIS document.

These situations and the format for the Reevaluation package are thoroughly discussed in [Part I, Chapter 11](#) of the **PD&E Manual**.

Generally, the reevaluation process is approval by exception. Issues that remain unchanged from the original study are so stated and documented. Any significant change in any of the 28 impacts listed on Pages 11-12 of the PD&E Manual are noted and expanded upon. This report is typically done in memorandum format. Evaluation of major design changes and revised design criteria are summarized, and the Preliminary Engineering Report is referenced for all original information that is unchanged.

The Mitigation Status and Commitment Compliance section serves to document commitments made or mitigating factors that were established through the Reevaluation process and serves as a basis for the scope on subsequent phases of the project. It is critical that this section is clear and thoroughly documented to highlight these commitments for the design Project Manager, who will advance the project through the design phase.

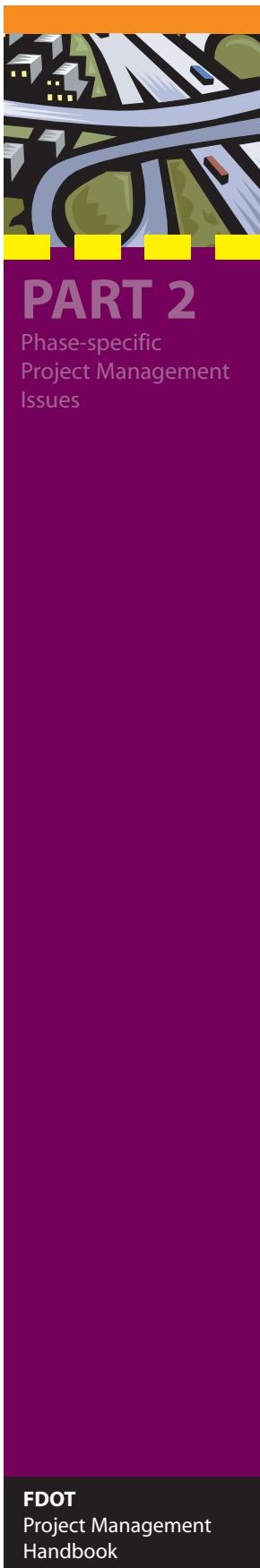
The Permits Status section lists previously obtained permits, if they exist. Any conditions of the permits should be included in the project documentation and summarized under this section. A thorough discussion of the Reevaluation process is included in [Part I, Chapter 11](#) of the **PD&E Manual**. Format guides, sample letters, and a flowchart defining the process are presented.

Efficient Transportation Decision Making (ETDM)

The Florida Department of Transportation, working in conjunction with the Federal Highway Administration and other federal, state and local agencies, is developing a refined and improved methodology for effecting improved transportation decisions. Initially called "streamlining" in response to Section 1309 of the Transportation Equity Act for the 21st Century (TEA 21), the FDOT process redefines how the State of Florida will accomplish transportation planning and project development within its current statutes and regulations.

This Efficient Transportation Decision Making (ETDM) process creates linkages between land use, transportation and environmental resource planning initiatives. Early, interactive agency involvement is expected to improve decisions and greatly reduce the time, effort and cost to effect transportation decisions. Efficiency is gained by two screening events built into the current transportation planning process. An Environmental Technical Advisory Team (ETAT) consisting of planning, consultation and resource protection agencies will be established. Each agency will appoint a transportation representative with responsibility to coordinate transportation reviews within their respective agencies. She/He will then provide her/his agency's response to the transportation agency (FDOT and MPO). This response will be advisory and will include input about the agency's regulatory and planning programs.

Screenings are conducted by the ETAT appointed for each FDOT district. Memorandums of Understanding (MOUs) between agencies may reduce the number of duplicate reviews conducted by delegating some review responsibility. MOUs will also address methods of dispute resolution.



The screening events occur during development of the Long Range Transportation Plan (LRTP), prior to a project being programmed in the Department's Five-Year Plan. These screening events will be conducted years earlier than they are now scheduled in the overall process. Advancing the timing of studies will enable responsible agencies to identify problems early and recommend avoidance or minimization options. Early agency involvement, coupled with continuous community impact assessment and involvement, is expected to improve the quality of decisions made and reduce late project changes or challenges.

It is during the Programming phase that the ETAT will also conduct an NEPA review to achieve a decision on the NEPA scope of work to be conducted during the Project Development phase. This review will assist the Department and the FHWA in making a class of action determination before the project is programmed in the work program. Source data for these reviews will be a review of Geographic Information System (GIS) analyses and databases housed in the Florida Geographic Data Library.

The ETDM process stipulates that permits may be applied for and will be granted during the Project Development phase. Granting of permits will require agreement with the design conditions set forth in the application or with the project performance criteria that have been established. All agencies have verified that this new procedure will be feasible. However, as of February, 2004, none of the permitting agencies have developed and approved specific operating agreements to implement ETDM.

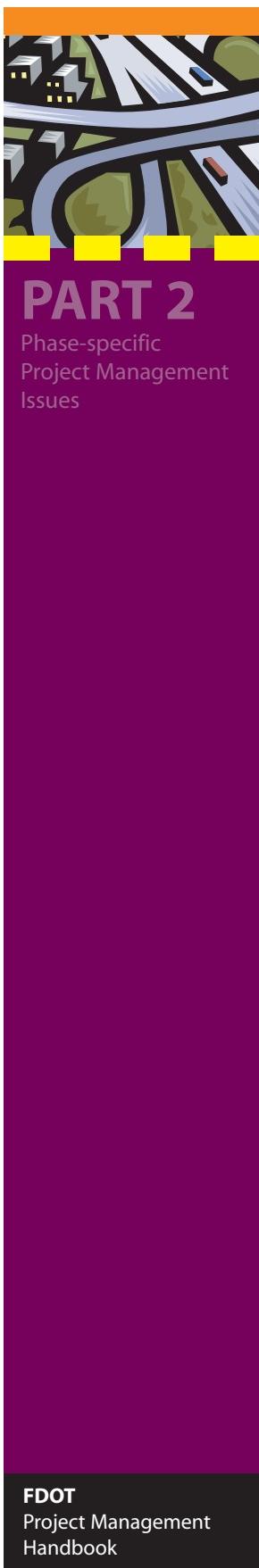
Key features of the new ETDM Process include:

- Early and continuous involvement from the agencies and community citizens in decision making.
- Early identification of avoidance, minimization or mitigation requirements (as well as identification of enhanced or positive benefits).
- Reduction of duplication of effort by multiple agencies, where practicable.
- Linkages between land use, transportation, and environmental protection or preservation efforts.
- Access to comprehensive data in standardized formats.
- Early project approvals for less complex projects.
- Reduction in the number of projects subject to detailed reviews.
- Reviews focused on the key issues identified by ETAT.
- Permit issuance linked to NEPA reviews for more complex projects.

Internet References

Some Internet references cited in the chapter are linked directly in the text and are listed here:

- Procedure No. 650-000-001, [Project Development and Environment Manual](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 1. *Policies, Procedures, Forms and Manuals*
 2. *Procedures by number*
 3. *Series 600*

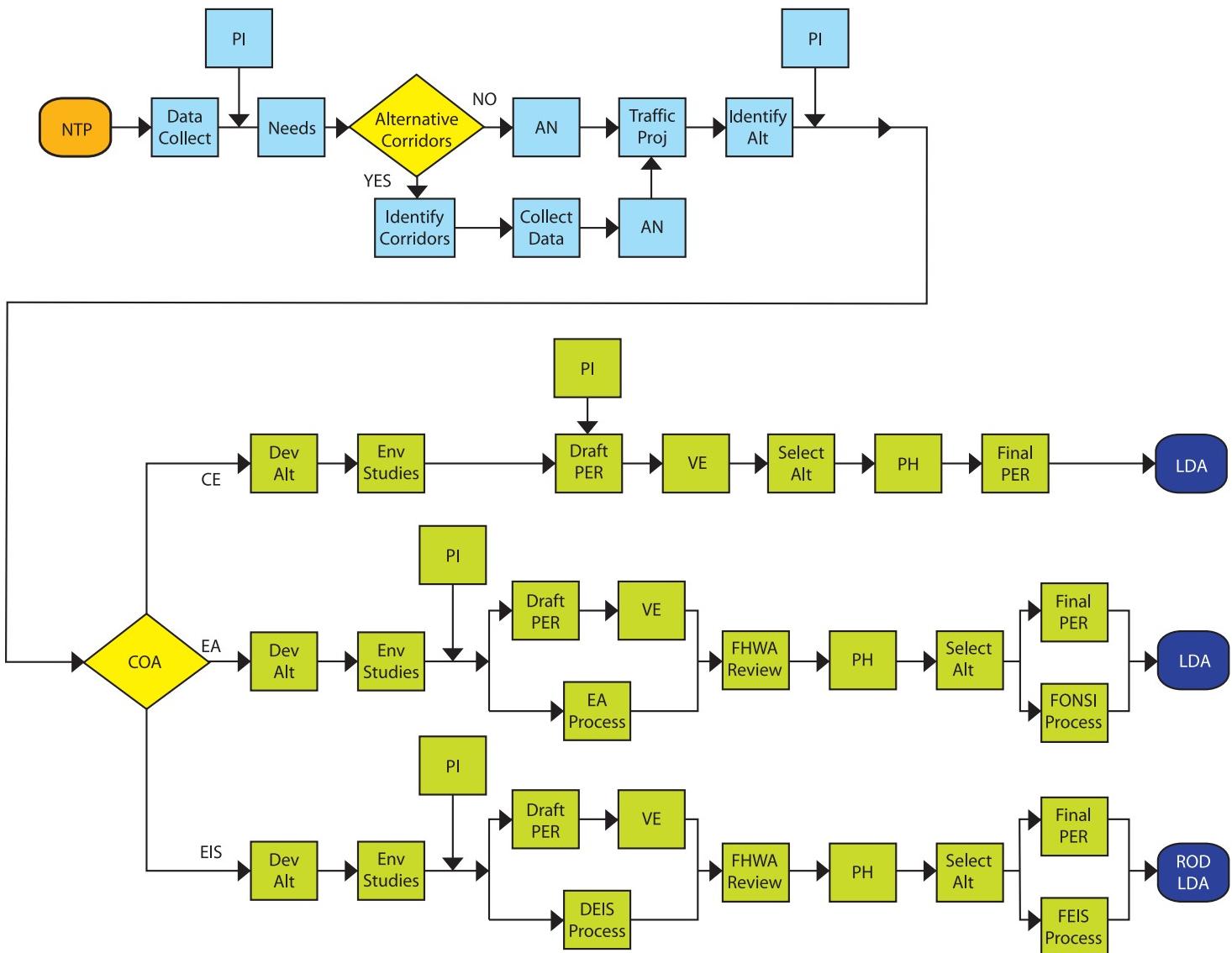


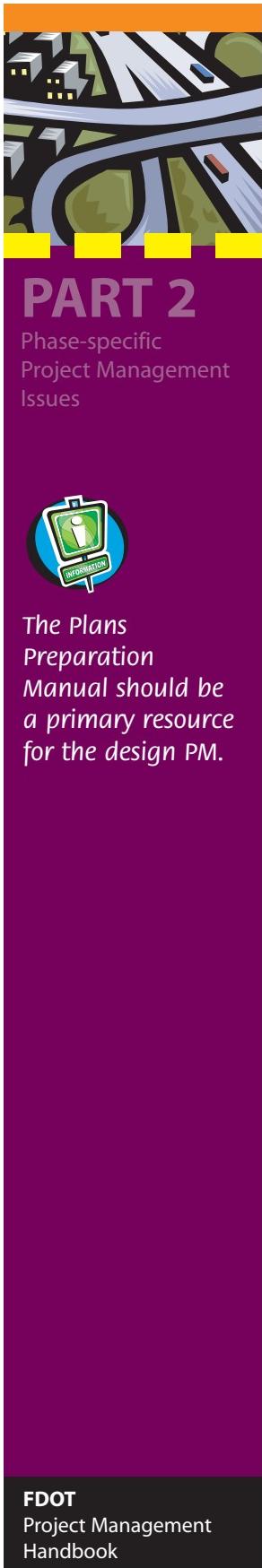
4. *Procedure 650-000-001*
- Procedure 525-030-160, [Interchange Justification](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Procedure 525-030-160*
- [Interchange Handbook](#) and associated training materials.
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Planning*
 4. *Offices-Systems Planning*
 5. *Systems Management*
 6. *Interchange Justification*
- [Public Involvement Handbook](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Environmental Management*
 4. *Publications- Public Involvement Handbook*
- Procedure 625-000-007 [Volume I, Plans Preparation Manual](#),
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by number*
 5. *Series 600*
 6. *Procedure 625-000-007*
- [Section 4\(f\)](#)
 1. <http://www.fhwa.dot.gov/>
 2. *FHWA Web Sites*
 3. *Planning, Environment and Reality*
 4. *Environment - Environmental Guidebook*
 5. *The Built and Social Environment*
 6. *Volume 2 - Section 4(f)*
- [Public Involvement Handbook](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Environmental Management*
 4. *Publications- Public Involvement Handbook*

Figure 16-1
PD&E Process Flowchart

Glossary of Abbreviations

| | | | |
|-------|--------------------------------------|-----|--|
| AN | Advanced Notification | LDA | Location and Design Concept Acceptance |
| CE | Categorical Exclusion | NTP | Notice to Proceed |
| COA | Class of Action | PER | Preliminary Engineering Report |
| DEIS | Draft Environmental Impact Statement | PH | Public Hearing |
| EA | Environmental Assessment | PI | Public Involvement |
| EIS | Environmental Impact Statement | ROD | Record of Decision |
| FONSI | Finding of No Significant Impact | VE | Value Engineering |





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The Plans Preparation Manual should be a primary resource for the design PM.



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CHAPTER 17

Design Project Management

The design process is well explained in **Procedure No. 625-000-007**, Chapters 13 and 14, **Plans Preparation Manual (PPM)**, Volume I, and **Procedure No. 625-000-008**, [Chapter 2, Plans Preparation Manual](#), Volume II. All Project Managers should be familiar with these references. The following are other useful references:

- [The Design Standards](#)
- [Drainage Manuals](#)
- [Intersection Design Guide](#)
- [Procedure No. 710-020-001, The Utility Accommodation Manual](#)
- [Roadway Update Memos](#)
- [Basis of Estimates Handbook](#)
- [Standard Specifications for Road and Bridge Construction](#)
- [AASHTO Policy for Geometric Design of Highways and Streets](#) (Green Book)
- [AASHTO Roadside Design Guide](#)

Design Objectives and Criteria

Sections 13.1- 13.4, [Chapter 13, Plans Preparation Manual \(PPM\)](#), Volume I, outline necessary activities to define the design project scope and parameters. As the Project Manager performs these tasks, the following tips will be helpful:

- Chapter 2 of this handbook provides additional information on project objectives.
- The design Project Manager (PM) should read the Project Development (PD&E) report and understand all commitments made during the PD&E study. It is a good idea to meet with the PD&E Project Manager to review the project in detail. Do not hesitate to consult with the PD&E Project Manager on sensitive and unclear project issues.
- Design concepts in the preliminary engineering report should be reviewed and not changed unless current site conditions or design criteria have changed. Typically the PD&E Report will include recommended design criteria, significant exceptions and variations, a cost estimate, typical sections and right of way requirements. If any of the design concepts committed to in the PD&E report are changed during design, an environmental reevaluation, may be required (see Chapter 16).
- For smaller design and traffic improvements, project objectives come from public requests, analyses of crash data and local agency requests. The type and nature of improvements are not specifically defined for these types of projects, but rather the general objective of improving the safety, operations and/or capacity of the facility is the guiding principle.
- Construction, maintenance and local agencies should be included in the scoping process.



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Define the data
necessary to
support the design.

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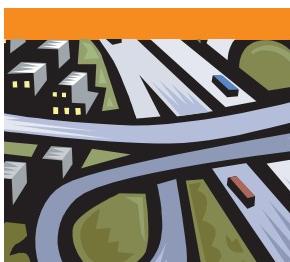
- It is good practice to conduct a field review with all the disciplines that might be involved in the project before finalizing the scope.
- When scoping a Resurfacing, Restoration and Rehabilitation (RRR) or resurfacing project, the budget is usually an important issue. [Chapter 25](#) of the **PPM**, Volume I, provides criteria for RRR projects. Costly improvements should be analyzed on 3R projects to determine if they are cost-effective or if a design exception or variation is appropriate.
- The appropriate design standards for the project must be decided early in the process.
- It is important to be as thorough as possible at this stage. Adding requirements to a project after design activities have begun can be very expensive and will cause delays.

Initial Data Collection. The required data collection should be specifically tailored for each individual project. The first step is to define the data necessary to support the design processes that were established by the project scope. Sources may vary to include any or all of the following:

- As-built plans and existing right of way maps
- Straight line diagrams (be careful - they are not always current)
- PD&E Reports and environmental documentation
- Planning Studies
- Efficient Transportation Decision Making (ETDM) Program Screen(currently under development)
- Interchange Justification and Modification Reports
- Surveys (ground or aerial)
- Geotechnical explorations
- Maintenance records, to include the current maintenance rating data
- Field reviews
- Previous studies by others
- Preliminary engineering plans
- Traffic data
- Crash records
- Utility plans and other records
- Local agencies



Once the available data have been collected, a definition of the project data collection requirements should be developed, to include a timeline and deliverables. The Florida Department of Transportation (FDOT) PM should collect all the above information that is available and record it electronically, if possible. The assembled background information can then be presented to the consultant at the Notice to Proceed meeting to allow a



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RRR projects are limited in scope and budget.

much faster start on the design work. Data collection that can best be done by a consultant should be included in the scope of services. Coordination with appropriate discipline chiefs and/or subconsultants should take place early in the process so that all interested parties have a clear understanding of their roles and responsibilities during the data-collection phase.

Resurfacing, Restoration, and Rehabilitation (RRR) and Non-PD&E Projects.

The preceding discussion dealt primarily with larger design projects. RRR and other smaller projects are generally limited by the scope of work that is to be completed, physical

constraints, or economic feasibility. Different criteria exist for their development. These criteria can be found in [Chapter 25](#) of the **PPM**, Volume I, for non-interstate roads. Section 1.5, [Chapter 1](#) of the **PPM**, Volume I, covers RRR design of interstate highways and freeways. In some cases even these standards are non-attainable, and as a result, a design variation or exception must be acquired. Variations and exceptions are covered in [Chapter 23](#)

of the **PPM**, Volume I. It is imperative that these be processed and approved early in the design to avoid costly rework. Pavement evaluation on rehabilitation projects should be done at the very beginning of the project, even in the PD&E stage if possible. When it is done later in the project, the assumed milling and pavement depth may be wrong, and expensive changes in profile and in typical sections will result.

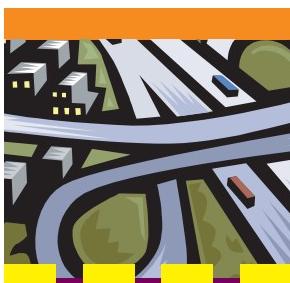
Resurfacing, restoration, and rehabilitation projects tend to be limited in scope and are geared toward rectifying specific deficiencies within a project corridor. Safety and enhancement projects are very similar in nature to RRR projects. An important aspect of safety projects is the benefit-cost ratio. Therefore, scope creep must be kept in check and project costs must stay within budget to maintain a viable ratio.

Variations and Exceptions. Design variations are required when deviations from the Department's criteria occur. Design exceptions are required when neither the criteria of the Department nor those of the American Association of State Highway and Transportation Officials (AASHTO) can be met for any one of the following critical design elements, which are typically safety-related issues:

- Design speed
- Lane widths
- Shoulder widths
- Bridge widths
- Structural capacity
- Vertical clearance
- Grades
- Cross slope
- Superelevation
- Horizontal alignment
- Vertical alignment



Source: FDOT



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Communicate well
with support
services.

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- Stopping sight distance
- Horizontal clearance

[Chapter 23](#) of the **PPM**, Volume I, provides guidance in exceptions and variations. Chapter 13 of the [Utility Accommodation Manual \(UAM\)](#) also provides guidance on exceptions and variations related to utilities. If exceptions are required that involve utilities, the criteria and process described in the **UAM** should be used rather than the **PPM**.

Coordination of Design Projects

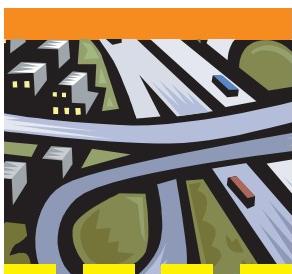
Support Services. Support services can often make or break a project. Timely delivery of these service components is paramount to keeping the overall design schedule on track. These services may include any of the following:

- Surveying and Mapping
- Geotechnical
- Environmental
- Drainage
- Utilities
- Public Transportation
- Traffic Engineering
- Architecture
- Landscape Architecture
- Structures

The key to keeping these services on track is timely and effective communication with the discipline manager for each component. All involved disciplines should participate in the development of the scope of services and schedule. An early decision must be made on which support services will be provided in-house, which will be provided by on-call consultants and which will be performed by the design consultant. In-house services generally must be coordinated very early in the project because of the large backlog of work that usually exists. It is important to understand the sequence of these services. For instance, geotechnical investigations cannot start before surveying, but they are necessary for preliminary structural design. Chapter 11 of the [UAM](#) describes procedures used for utility surveys and locates. The permit for utilities in the right of way requires the utility to locate as necessary any of their facilities by exposing or furnishing elevations as necessary to accommodate FDOT construction.

Regular coordination must be maintained with these discipline managers so that the project stays on track. The responsibility for project completeness rests with the PM, not with the individual discipline managers. Individual discipline managers do not have the same overall view of the project as the PM. Therefore, it is a good practice to keep support services advised of the schedule to verify that schedule and submittals meet the requirements of the project.

Right of Way. Right of Way (R/W) requirements should be identified as early as feasible in the project. The district Right of Way Office can provide valuable insight to many issues, including maintenance of property access. The awareness that they can bring to the



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Utilities and ROW
are frequent
sources of project
delays.

design process can save a considerable amount of redesign work and acquisition cost. The R/W office should be consulted from the early stages of design through completion. On many projects R/W acquisition costs exceed the cost of construction. The early involvement of R/W staff will help achieve a proper balance of project objectives and total cost. R/W may be required for utilities as part of the project. Early establishment of utility property rights and R/W requirements is essential to keeping the project on schedule.

Preliminary R/W requirements should be identified at the completion of Phase I (30%). Final R/W requirements should be submitted after completion of Phase II (60%) plans. At this point a field review should be held with the FDOT PM, the consultant PM and right of way staff to ensure that:

- Mainline R/W requirements are complete.
- Pond R/W requirements are complete.
- Mitigation R/W requirements are complete.
- Phase II plans are complete.
- Possible parcel modifications have been investigated and resolved.
- Utility easements or R/W requiring subordination are identified.
- Necessary easements are identified.

It should also be noted that the R/W acquisition process usually drives the project schedule once the R/W requirements have been defined. Therefore, the sooner these requirements are set, the sooner the entire project can be completed. The participation of the district Right of Way Office is particularly important on a design project with a compressed schedule. The right of way phase can be delayed if the design Project Manager does not identify the R/W requirements on schedule. R/W maps and documents also will be delayed. The right of way process is described in Chapter 18 of this handbook.

The R/W Office sometimes makes commitments (preservation of trees, driveway modifications, and so forth) to property owners during the R/W process. The designer must know about these commitments, and they must be reflected in the plans if appropriate.

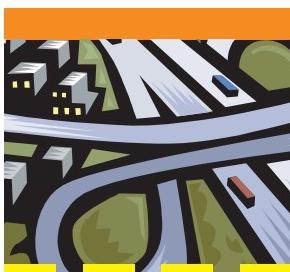
Structures. The classification, development phases and responsibilities of the district and Central Office structures personnel can be found in [Chapter 26, Plans Preparation Manual](#), Volume I. An important step in the development of bridge plans is the Bridge Development Report (BDR), which is submitted with the Phase I (30%) plans. Chapter 26, Volume I, also describes the content and format of the BDR. Additional structure design information can be found in Chapters 27 through 32 of the [PPM](#), Volume I. Other important structural design references can be found on the [Structures Design Office](#) website.

Traffic Design. The design of signs, markings, lighting and signals is explained in [Chapter 2](#) of the [PPM](#), Volume I. Turn lane requirements and lengths are usually established prior to the design phase of a project. Any changes need to be verified by performing a capacity analysis. It will determine if the changes will have an adverse effect on traffic flow. Additional information can be found on the [Traffic Operations Office](#) website.

Joint Participation and Other Agreements. Joint Participation Agreements (JPAs) are used for:

- Utility relocation or construction of FDOT right of way.
- Local advance or partial funding of FDOT projects.

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The PM should be sensitive to the utility's interests.

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- Joint use of drainage ponds and other facilities.
- Local funding of local projects (adjacent or interconnected) bid with FDOT projects.
- Highway beautification projects performed by a local government with FDOT funding.

Most JPAs involve design and construction phases, although there can be JPAs on planning, PD&E and right of way phases of work. The FDOT PM is commonly responsible for preparing the JPA. Formats and local requirements vary widely, so the PM should coordinate closely with the district JPA Coordinator. The PM is typically responsible for obtaining the signatures and encumbering the funds necessary for a JPA. Because JPAs are needed for such critical activities as utility and drainage work and funding, they frequently are on the critical path of a project. The PM should recognize that execution of a JPA may not have the same urgency for the other agency as for FDOT, so the process should begin early. A reasonable objective is to have JPAs executed prior to completion of Phase 2 plans. Appendix C contains the definitions of various types of agreements commonly used by the FDOT.

Utilities. Utility Agencies/Owners (UAOs) are major stakeholders on a majority of transportation projects. Proper coordination with all utilities involved is an important aspect on every project. Utilities are one of the most frequent sources of both project delays and claims. It is essential that utility conflicts be properly identified and resolved early. There are a number of useful resources to help the design PM understand the utility coordination and accommodation process, including:

- The district Utilities Office.
- The **Utility Users' Guide**.
- [Chapter 5 of Procedure No. 625-000-007, Plans Preparation Manual, Volume I](#).
- [Procedure No. 710-020-001, Utility Accommodation Manual](#).
- AASHTO [Guide for Accommodating Utilities Within Highway Right-of Way](#).
- [Utilities Office](#) website.

The PM should be sensitive to the utility's interests. He/She should take some time to understand how utilities do business and build relationships. Face-to-face dealings with utility personnel are a very effective means of coordination. A personal relationship is more likely to result in timely actions than is impersonal correspondence. When possible, the project should be designed around the utility. If a utility relocation can be avoided, cost to the taxpayers (who are also utility customers) is avoided. The PM should evaluate the cost of designing around a utility and the cost of relocation. Constructability must also be considered. Such good-faith efforts will reap benefits when relocations are truly necessary. Close coordination with the district Utilities Office is essential. The knowledge and experience of its staff can be a major help throughout the process.

The process begins in the preliminary (Phase I) design, by determining which utilities will be involved on the project, both existing and proposed. An excellent way to start this process is to contact the [Sunshine State One Call of Florida](#), Phone: (800) 432-4770. It maintains a database of most of the UAOs' facilities within the State. By Florida statute all subsurface excavations require advance notification of not less than two nor more than five full business days to the Sunshine State One Call. The PM must also review existing plans for potential utilities and conduct a field review to determine if any additional utili-



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The bulk of utility coordination effort takes place after Phase II submittal.

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ties are present. She/He should verify the list of UAOs provided by performing field reviews and by contacting each utility individually. An initial task is to determine if the utility has property rights within or adjacent to the FDOT R/W. This information may affect project schedule, reimbursement rights and the design.

A utility pre-design conference can aid project progress. This meeting is normally held after the Phase I submittal. The purpose of this meeting is to provide a general overview of the project to the UAOs and to determine the general level of involvement from each UAO. The district Permit Engineer Office should be included in the meeting to ensure that the permitting of utilities during design is controlled. Expected deliverables from the utilities should be addressed. Not all utilities have electronic plan production capability. Facilities that are difficult or not economically viable to relocate should be identified in this meeting. The cost of avoiding a utility conflict should be compared to the cost of relocation, and then a reasonable approach can be taken. The UAO may be willing to fund an increase in project cost to avoid a significant relocation cost. All compensatory interests that are held by the UAOs within the project should be identified at this stage. This identification will allow ample time to either design the project around these facilities or to develop the proper alternative strategies that will ensure a successful resolution to the issue. Plans should be distributed to each UAO so that it can determine if the existing facilities have been accurately depicted in the plans.

During the development of Phase II plans, once the preliminary engineering layout is developed, field reviews with concerned utilities can help resolve many issues. The bulk of the utility coordination effort is done after the Phase II submittal. With the proposed design more fully developed, potential conflicts between the proposed design and the existing utilities can be identified. All potential conflicts need to be verified so that the UAO can make a proper determination as to how the conflict will be resolved. Subsurface utility exploration is useful in determining utility locations accurately and providing data necessary to identify conflicts. Chapter 11 of the [UAM](#) provides guidance on subsurface utility engineering.

Submittals to each UAO should contain all appropriate forms (available on the [Utilities Office](#) website) and copies of the plans. The UAO is required to furnish information on the disposition of its facilities. When the utility marks up the plans, the standard color coding (see below) shall be used. This information is subsequently transcribed into the utility adjustment plans.

Standard Color Codes:

Red = to be removed

Green = to remain

Brown = proposed

A utility design conference informs all parties involved of what changes have been made since the Pre-Design Conference and provides a forum to coordinate any intended utility work. Any Joint Participation Agreements (JPAs) need to be initiated at or prior to this stage so that the designs can be generated and incorporated into the plans before the completion of the design phase of the project.

After the Phase III submittal, all UAOs should receive a copy of the current plans so that they can verify that all information they have provided has been accurately shown in the plans. Once all the utility agreements and forms have been completed and the disposi-



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Each design project
should have a CAP.

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tion of all utilities has been correctly indicated in the plans, the utility coordination aspect of the project can be considered complete and the project certified.

Community Awareness Plan. Public participation is an important element of all FDOT projects, from planning and PD&E through design and construction. During planning and PD&E the emphasis is on participation in the decision-making process concerning the need for a project and its basic concepts. In the design phase, the emphasis changes to one of informing the public of the project. People are much more likely to tolerate the inconvenience of a construction project if they understand the need for the work and have good information about the project. Therefore, the emphasis during the design and construction phases is on communicating with the community. During design there are also opportunities to work out details of the project in an effort to minimize negative impacts.

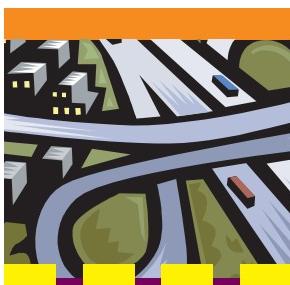
Each design project should have a Community Awareness Plan (CAP) that will carry forward into the construction phase. This plan can be part of the consultant scope of services or it can be developed by the FDOT PM. The CAP should explain the activities that will take place to keep the community informed of the project and to minimize negative impacts. The scope and complexity of a CAP will vary according to the community concern that is expected about a project. Projects can be grouped into one of four levels of public concern that they are likely to generate:

- **Level 1.** Project is not controversial, causes negligible access impacts and traffic disruption. Examples are work outside the roadway, simple rural resurfacing, some signal work, pavement markings, bridge and other maintenance.
- **Level 2.** Project has general public acceptance, little impact on access and reasonable degree of traffic disruption. Examples are urban resurfacing, bridge repairs and median revisions (not access control) that require lane closures.
- **Level 3.** Project is controversial, will significantly impact traffic flow or will adversely affect access to properties (temporary or permanent). Examples are parking removal, median opening closures, traffic signal removal, roadway widening, major reconstruction and projects requiring a detour.
- **Level 4.** Project involves interstate work including maintenance work, road widening, temporary ramp closures, construction of new interchanges and major reconstruction. All projects that require total closure (either temporary or permanent) of roadways, bridges or railroad crossings.

Phase I of plan development is the most important for CAP activities. Decisions affecting access management, Maintenance of Traffic (MOT), possible interruptions of utility service and drainage are almost always of concern to the public. The PM must have a good understanding of the impacts on the community and the concerns and needs of the public. Changes in vertical alignment are likely to create access problems during construction. Drainage during construction can also be affected.

A CAP should, as a minimum, include the following:

- Date of the plan and each revision.
- Name of person initiating the plan.
- A description of the project and anticipated level of public concern..
- Identification of city, county and other local officials that may be involved in the project and how they will be kept informed of project activities.



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Context Sensitive
Design is an
emerging concept.

- A summary of expected traffic impacts during construction.
- A description of the community and properties affected by the project.
- A discussion of removal of street parking (if any) and how it will affect adjacent properties and businesses.
- Special features and amenities that will be included in the project, including landscaping and esthetic treatments.
- Construction schedule, contract time and consideration for alternative contracting methods.
- A list of known community concerns and a strategy for addressing each of them. The PD&E Report will be a good place to begin this list.
- A list of all PD&E and right of way commitments made to the public and how they are to be addressed.
- A plan for news media relations (for Level 4 and possibly Level 3 projects), developed in cooperation with the district Public Information Office. A public information campaign may be appropriate for very large projects.

The media can be of great assistance to the Department in encouraging citizen input and keeping the public informed about a project. Project Managers should work with their district PIO to develop and implement a CAP.

The PM should be aware of any unique CAP requirements of the district. The [Public Involvement Handbook](#) is an excellent resource to use in developing a CAP. The CAP should be updated throughout the design process, then passed to the construction PM for use during the construction phase.

Context Sensitive Design. Context Sensitive Design (CSD) is an emerging concept in highway design. It involves a collaborative, interdisciplinary approach in which citizens are part of a design team. A CSD requires a good understanding of the operational effects of highway geometry and sensitivity to local constraints, valued community resources, and desires for unique features or design elements. The PM is responsible for understanding the community objectives and implementing an acceptable solution.

Often it is possible to implement CSD within the standards and criteria established for the project. In cases when a design value outside the current guidelines is needed, the PM must communicate the reasons for such solutions and accept appropriate tradeoffs for specific circumstances. When design criteria are outside the guidelines, a design variation or design exception will be prepared. Risk assessment and mitigation of the geometric condition is addressed in the documentation.

Design professionals are understandably cautious about increased liability associated with compromises in design criteria. Tort liability should be considered, but it should not be an impediment to the implementation of CSD. AASHTO encourages flexibility within the range of design criteria found in the AASHTO [Green Book](#), but it does not endorse any deviation from these criteria except through authorized design exceptions. The design exception process (previously discussed) considers the risks and advantages of alternatives, taking into account safety, economics, adopted standards and recognized engineering practices. The PM should ensure that this process is followed in order to minimize liability.

The reader is referred to [NCHRP Report 480, A Guide to Best Practices for Achieving Context-Sensitive Solutions](#) and the FHWA national website for [Context Sensitive Design](#). FHWA's

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Coordination with local governments is essential.

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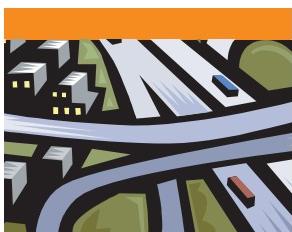
publication, *Flexibility in Highway Design*, is a useful document that can be downloaded from the FHWA website.

Local Governments. Local governments are often key stakeholders on any given project. Therefore, they need to be kept informed of progress of the project throughout its life. The PM should, at the beginning of the project, learn if any commitments have been made to any local agencies during any previous planning and project development phases. Once this information has been obtained, a coordination meeting should be scheduled so that the project objectives can be relayed to the appropriate personnel. Since local agencies have a vested interest in the project, they should be afforded an opportunity to provide input to the design process. This opportunity can be easily provided through the standard phase reviews and effective coordination on the project. Since elected officials and local agency personnel can change during the course of a project, the PM should keep abreast of such changes and ensure that the appropriate lines of communication are maintained. Being proactive with this process can create many allies.

Some coordination issues with local governments to keep in mind include:

- All required agreements should be identified as early as possible. Lighting, landscaping and others frequently are overlooked and result in project delays.
- Local government-owned utilities sometimes are very small and not as experienced in dealing with the FDOT as privately-owned companies, so they may require some additional effort.
- Many local agencies do not have the engineering resources needed for in-depth technical coordination of major projects. The PM must be sensitive to the technical capabilities of the local agencies and tailor requests for reviews and other input accordingly.
- Required Joint Participation Agreements (JPAs) must be coordinated early and managed well to avoid delays.
- Any agreement that requires board approval by the local government must be reviewed by the local agency staff and then placed on the advertised agenda. This process is usually time-consuming and must be anticipated in the project schedule.
- Maintenance agreements must be coordinated early to ensure that they are completed prior to production.

Railroads. Coordination with railroad companies is similar to utility coordination with respect to how and when the coordination process takes place. There are a few other important aspects that must be considered when dealing with the railroads. While only some utilities hold compensable interests for the properties they occupy, all railroads own the R/W that they occupy. Any encroachment on railroad R/W will require a permit from the railroad company. Any permanent use of railroad R/W will require a Use Agreement. Both will normally require compensation and will require lengthy reviews by the railroad company. Railroad coordination and permitting is a very lengthy process that should be initiated as early in the project as possible. Discussions with the district Railroad Coordinator should be held prior to any direct communication with the railroad in question. Railroads usually allow only their own forces or contractors to perform any adjustments to their facilities. Therefore, the MOT plan for the project should include appropriate information for railroad contact personnel and any special considerations that the



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Permitting is a time-consuming process.

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Department's contractor needs to consider for the bidding process or during the actual construction of the project.

For additional information on general railroad criteria, refer to [Chapter 6](#) of the **PPM**, Volume I, and Chapter 9 of the [UAM](#).

Public Transportation. It is necessary to coordinate with the district Public Transportation Office (PTO) (also known as the Office of Modal Development in some districts) on any urban design project. Early coordination can avert many design problems such as special Americans with Disabilities Act (ADA) requirements and unique MOT problems associated with bus stops. Usually the PTO is also involved with airport coordination. Any project that is in the vicinity of an airport should be reviewed early. Potential problems are locations and elevations of structures, signs and lighting. The height of construction equipment can also be a problem.

Permits

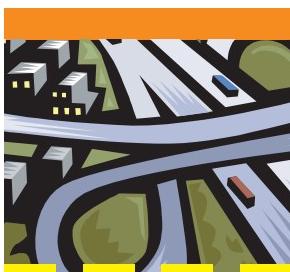
Environmental permits are intended to minimize adverse environmental, water quality or water quantity impacts of construction and operations. Permitting requirements have been enacted by legislation and are administered by regulatory agencies. These agencies have established distinct thresholds, exemptions and permit conditions specific to their agency.

Environmental permits are required from one or more regulatory agencies for most land alterations including the addition of impervious surface; construction, alteration or abandonment of stormwater management facilities; bridge reconstruction and repair; major shoreline stabilization projects; and wetlands or surface water impacts. Limited types of construction activities may be exempt from permitting requirements of regulatory agencies. These limited construction activities may include milling and resurfacing, culvert extensions or replacement with no wetlands or surface water impacts, and minor maintenance and repairs. The Department has committed to jointly submit utility environmental permits if the utility has completed the necessary work on time and the Department of Environmental Protection (DEP) has no objections. Separate review fees may be required by DEP. Permit applications are reviewed by the permitting agencies for their engineering soundness and the effects of the project on flood protection, water quality and the environment.

The Project Manager must coordinate the permitting needs through the district Permits Coordinator, who is responsible for identifying all permitting involvement for a project. The Project Manager must include time in the project schedule for all the required permitting activities, which include wetland identification and mitigation, pond siting, the bridge hydraulics report and no-rise certification. Permitting is a time-consuming task that involves a degree of risk. Permitting tasks are often on the project critical path. It is the Project Manager's responsibility to ensure that all necessary permits have been acquired for the project. If the permits that require signature have not been executed by the scheduled production date, the project will not be let on schedule.

Efficient Transportation Decision Making (ETDM) Process. One of the benefits of the ETDM process is early identification of potential project permits. In the Programming Screening process of the ETDM, the ETDM coordinator will prepare a Programming Screen Notice that will supply the review agencies with project and environmental information. The input that is received from the Programming Screen will allow the Project Manager to pursue the necessary environmental permits and approvals. By providing this information

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Know the applicable permitting authorities.

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to the permit agencies early in the process, Project Managers will be able to request and receive state and federal permits as well as other authorizations and approvals at the end of the Project Development phase.

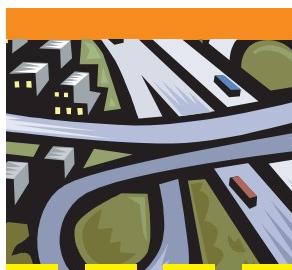
Permitting Authorities. The following are the permitting authorities most often involved with roadway projects:

- The U.S. Environmental Protection Agency (EPA) is currently responsible for reviewing federal-aid highway projects located in areas of the Volusia-Floridan and Biscayne aquifers, which have been designated by EPA as Sole Source Aquifers.
- The U.S. Army Corps of Engineers has the authority to issue permits for activities involving the discharge of dredge and fill materials into waters of the U.S. including wetlands.
- The U.S. Coast Guard (USCG) issues permits for bridges or causeways in or over navigable waters of the U.S. and for causeway construction in all tidal waters of the U.S. The FHWA is responsible for determining if a project will require a USCG permit.
- The Department of Environmental Protection (DEP) is the state's permitting authority for the National Pollution Discharge Elimination System (NPDES) program. An NPDES permit is required for stormwater discharge from large and small construction activities that disturb equal to or greater than one acre and less than five acres of total land area. DEP also issues leases and easements to use sovereign submerged lands. They are the authority for wetlands and stormwater permitting in most of the panhandle of Florida in areas west of the Aucilla River in Jefferson County.
- The state's five Water Management Districts (WMDs) have been delegated authority by DEP to administer the state's Environmental Resource Permit (ERP) program in most areas east of the Aucilla River. The ERP program regulates activities in wetlands, treatment of stormwater and certain issues pertaining to the use of sovereign submerged lands. The WMDs include: Northwest Florida, Suwannee River, St. Johns River, South Florida and Southwest Florida.

Permit Coordination. The Permit Coordinator is responsible for acquiring all the necessary FDOT permits for a project. Coordination activities include the following:

- Conducting meetings and field reviews
- Identifying potential permit involvement
- Preparing and submitting permit applications, with all supporting documentation
- Verifying permit compliance
- Requesting permit extensions

The Permit Coordinator will make all the permitting agency contacts for the FDOT and acquire the permits by the defined time in the project schedule. During the process the Project Manager must work closely with the Permit Coordinator to provide support, attend meetings when necessary, assist with timely issue resolution, make necessary plan changes and report any schedule changes. The Project Manager must monitor progress throughout the permitting process.



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The PM must ensure that all permits are acquired on a timely basis.

Permitting Process. The permitting process begins in the PD&E stage of the project with the environmental documentation and the development of a Permit Coordination Package, all of which serve to give regulatory agencies advance notification of the project and potential environmental impacts. The PM should hold pre-application meetings and field reviews with permitting agencies early to define requirements prior to committing significant design effort. The PM should design the project to minimize identified impacts and to fulfill all commitments made during the PD&E project.

When designs are at Phase II (60%) complete, the Permit Coordinator will begin preparing the permit applications. The Project Manager should review and discuss the permit application with the Permit Coordinator prior to submittal. The Permit Coordinator will submit the permit applications when the plans are at approximately 70-80% complete, or 8-12 months prior to the district production date. Permitting agencies usually do not want to see the full plan set. Typically Computer-Aided Drafting and Design (CADD) layers for non-essential information, such as MOT and utilities (as long as they do not contain or require erosion-control measures), can be turned off to simplify the submittal for the reviewing agency. The PM must coordinate any reduction in the plan set with the agency before submittal.

The Permit Coordinator will monitor the progress of the application, provide any additional information requested, and address and resolve any adverse comments or objections raised by the regulatory agencies. The Project Manager must assist the Permit coordinator in this process. Once the permits have been issued, they must be carefully reviewed. Particular attention should be paid to "Special Conditions" to ensure that all conditions can be accommodated. The Permit Coordinator will distribute the executed permit to the appropriate offices.

During each step of the process, the Project Manager needs to monitor progress to ensure that all required permits are acquired on a timely basis. Meetings and field visits should be considered to clarify any concerns on the part of permitting agencies. The PM must notify the Permit Coordinator of any modifications in the project design that will affect permits. Changes in stormwater facility locations late in a project can substantially delay permits and adversely impact the project schedule.

Permit Processing Time. Almost all state environmental permits must be issued within 90 days of agency receipt of a complete application, as defined by the permitting agency. Agencies frequently find applications incomplete and require additional information, thereby extending the processing time. Thorough preparation and checking will reduce this risk but not eliminate it. It is especially important to respond to all comments when an application is returned with a request for more information. The following figure lists the average times to process permits, by agency:

Figure 17-1

Permit Processing Times

| Agency | Months |
|--------------------|--------|
| DEP | 6 |
| Corps of Engineers | 6 |
| WMD | 6 |



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Phase submittals
should be geared
to the nature of
the specific project.

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Figure 17-1

Permit Processing Times (Cont.)

| Agency | Months |
|----------------|--------|
| CG | 12 |
| EPA | 6 |
| Local Agencies | 6 |
| Railroads | 18 |

The Design Process

The FDOT design process includes a number of important steps. The PM must know this process and be able to use it effectively. Key parts to this process are discussed in this section. An important early step is to verify all commitments that affect design made during the PD&E phase, as documented in the PD&E report and the preliminary engineering report.

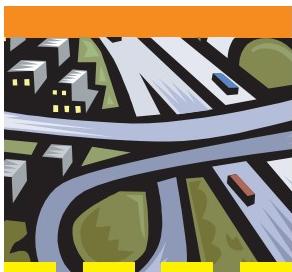
Phase Submittals and Reviews. [Chapter 16](#) of the **PPM**, Volume I, discusses all the required design project submittals. Section 2.3, [Chapter 2](#) of the **PPM**, Volume II, outlines the phase submittal requirements. The consultant PM should determine all unique requirements of individual districts. Phase submittals should be geared to the specific nature of the project. Not all projects require the submittal of all the phases in order to accomplish the project objectives. Submittal requirements may be eliminated based on the project complexity, production schedules, political commitments and the availability of information within the specific stage of the project.

Full Service Contracts are sometimes known as Zero Review Projects. Typically these projects are very straightforward with well-defined project scopes. In these types of projects, there are no formal reviews; the design team or consultant submits only completed plans at the end of the design period. The progress of the project is normally tracked by the PM through regular project meetings. It may also be helpful to invite discipline managers to the meetings to get concurrence or provide direction on specific issues.

Sometimes additional or intermediate submittals may be required to ensure the progress of a project. Examples would be a 15% and a 45% submittal. A 15% phase is usually defined as horizontal and vertical alignment. A 45% phase would be the addition of drainage details and design approaches to the maintenance of traffic. It is important to coordinate with all potential reviewers for intermediate submittals so that they understand the purpose and intent of the intermediate phase submittals. Some simple projects may need only a 15% and a 90% phase submittal.

The initial phase submittal should identify the need for exceptions and variations, and this information should be updated with each subsequent submittal.

The submittal requirements should be determined early and included in the consultant scope of services. The Quality Control (QC) plan and sufficiency checklists, along with Volume II of the **PPM** can be used to ensure the completeness of any particular phase submittal. More information on the QC process is available in Chapter 4 of this handbook.



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Preparation of the
TCP should begin
early in the design.

Not all reviewers must see all phase submittals. The plans review matrix is included in Section 2 of the project Scope of Services. The matrix is helpful in managing who should participate in each specific phase review. The scope should also indicate whether the Department or the consultant is responsible for distribution of the plan sets for review. In order to bring conclusion to any submittal, all review comments must be addressed, and final resolution of any issues must be achieved. Coordination with all reviewers can expedite the process. All decisions reached should be documented and communicated to the review team.

The FDOT PM should manage the review process and ensure that the consultant is not delayed because of late reviews. Several districts use a web-based electronic system to facilitate and manage the review and comment process. All review comments should come to the FDOT PM prior to transmittal to the consultant. It is the FDOT PM's responsibility to consolidate comments. If the FDOT PM has been reviewing the work in progress, there will be no surprises in the submittals. As a result, very few additional comments from him/her will be necessary. The consultant Project Manager should work to resolve all engineering-related issues by Phase II (60%) submittal, especially if the project requires new right of way. The FDOT PM should identify conflicting comments and resolve them as necessary. A comment resolution meeting may be held to deal with comments and responses that require resolution.

Maintenance of Traffic. All highway design plans must include provisions for the maintenance of vehicular and pedestrian traffic through construction work zones. The traffic control plan (TCP) addresses this issue. The TCP is part of the project design. [Chapter 10](#) of the **Plans Preparation Manual**, Volume I, provides guidance for the design of the traffic control plans. [Procedure No. 625-010-010, Maintenance of Traffic Training](#), requires that the individuals responsible for developing the TCP have a current Advanced Work Zone Traffic Control training certification. [Approved training providers](#) can be found at the Maintenance of Traffic website. The preparation of the TCP should begin early in the project. In many cases, maintenance of traffic issues may directly influence the final geometrics and materials specified in the final design. Preparation of the TCP should be a multi-disciplined effort. Individuals with expertise in traffic engineering, traffic planning, highway design, drainage and construction (and maybe others) should be involved. Maintenance of traffic policies and standards are contained in [Index 600](#) of the Design Standards.

Value Engineering. Value Engineering (VE) is the process in which specific major projects are evaluated to determine if changes to the project concept can result in either significant cost savings or if the overall value of the project to the public can be increased. Project Managers should review [Procedure No. 625-030-002, Value Engineering Program](#), for a detailed explanation of the value engineering process. Not all projects are selected to undergo a VE phase. The district Value Engineering Coordinator should be contacted to determine if there is any question as to whether or not a project has been selected as a candidate project.

Normally if a project has been selected for value engineering during the design phase, it takes place between the Phase I and Phase II submittals. In order for the VE team to provide the best input, they will need the full background and supporting documentation for the project. This information includes all preliminary work that was done on the project prior to the commencement of the design phase. In addition, all back-up information on which the proposed design is based should be made available. The most effective VE takes place when a comprehensive cost estimate has been prepared for the value engi-

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The PM must work
with the VE team.

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neering team. Therefore, a concerted effort to prepare a detailed cost estimate should be made and completed before the start of the VE process.

The PM is responsible for clearly explaining the scope of the project and all constraints and commitments to the VE team. The PM should also be aware that the VE process often generates many questions that need to be answered during the course of the process. As a result, the PM and the project discipline leaders should be available to provide answers or additional information as necessary. Cooperation between the PM, design team and the VE team is imperative in order to take full advantage of the VE process.

Regardless of whether or not a project is selected for a formal VE review, VE principles should be applied continuously to all design projects.

Specifications. As with other major aspects of a project, the preparation of the project specifications package is an important step. An understanding of the governing order of contract documents will aid in understanding the process. This information can be found in [Section 5.2](#), Division I, FDOT **Standard Specifications for Road and Bridge**

Construction. The rule of thumb is that the most project-specific documents take precedence over the least project-specific documents. Coordination with the district Specifications Department will aid in the production of this document.

Certain pay items trigger the need for Technical Special Provisions (TSPs) to be generated. TSPs need to be identified as early as possible during the design to allow for proper review prior to final submittal. The TSPs, signed and sealed by the engineer who developed them, are included in the Specifications Package.

The current specifications workbook should be obtained from the district Specifications Department prior to beginning the process. Since the development of these workbooks is a continuing process, it is important to have the most recent edition.

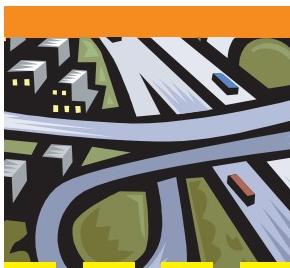
The following references provide additional information:

- [Handbook for Preparation of Specification Packages](#)
- [Chapter 14, PPM, Volume I](#)

Estimates. The estimated cost of construction must be completed at each phase to ensure compliance with the Work Program. [Chapter 17](#) of the **PPM**, Volume I, discusses the engineering design estimate process. The engineer's estimate of construction cost and contract time is one of the last activities performed on a design project. To do a quality estimate, the engineer must have the following material available:

- The complete plans, to include all components
- The complete specifications, to include supplemental specifications and special provisions
- The Design Standards referenced to the key sheet of the contract plans
- The computation book for the plans
- Utility work schedules
- The current [Basis of Estimates Handbook](#)

The specifications establish the method of measurement, basis of payment and pay items for work specified. The [Master Pay Item List](#) contains design aids, notes and computation information to aid the engineer in preparing the cost estimate.



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The Engineer's Report should be included with all plan submittals.

Engineer's Report. The engineer's report, often called the Project Design Documentation, should be included with all phase submittals on major projects. It should include information from any project development stages that occurred prior to the design phase along with the backup information and calculations for the project design, correspondence, certifications and overall cost estimate for the project. It should be well organized and referenced so that anyone seeking information from it can find it quickly and easily.

Plans Processing. It is important for the Project Manager to understand the procedure for processing the contract plans package to letting as described in [Chapter 20, PPM](#), Volume I. The PM is responsible for ensuring that all components of the package are correct, complete and included in the package. It is also the PM's responsibility to ensure that any electronic submittals are in accordance with the Department's CADD requirements for electronic deliverables.

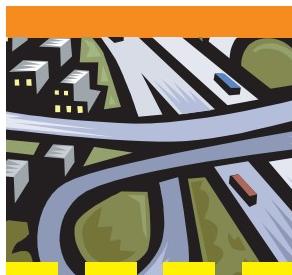
Post-Design Services

The scope of services normally should include post-design services so that the Engineer of Record (EOR) is readily available when needed during construction. Both the FDOT and the consultant Project Managers should retain a sense of ownership of the project all the way through construction. It is a good idea for the EOR to attend the pre-construction conference and weekly construction meetings at least for the first 25% of the construction project. Responsibilities for updating plans and as-builts should be established. Anticipated requirements for EOR involvement should be coordinated with the construction Project manager prior to scoping and negotiating Post Design Services. Because construction delays can be very expensive, responsiveness is extremely important. Because the EOR contract is managed by the FDOT design Project Manager, a communication procedure must be agreed to prior to beginning construction. All communications between the construction staff and the EOR can be routed through the FDOT design PM. Or direct communication between the construction staff and the EOR may be the preferred procedure with the understanding that the FDOT design PM will be informed of any cost commitments.

Errors and Omissions

Professional Engineers are accountable for the technical accuracy and quality of their work; however, mistakes do occur. Construction plans and contract documents may contain errors and omissions. FDOT and consultant Project Managers attempt to minimize errors and omissions through quality control. Mistakes caused by a lack of due care or professional negligence can result in substantial construction cost overruns. Florida statute obligates the Department to pursue recovery of certain added costs and to incorporate corrective measures to prevent recurrence. This process is explained in [Procedure No. 375-020-010, Identifying and Assigning Responsibility for Errors and Omissions by Design Consultants](#).

There are many steps in the design process that are developed to avoid errors and omissions in contract documents. These include the project QC plan (see Chapter 14 of this handbook) and the constructability and biddability reviews. Exercising due care in the preparation of plans and construction documents is expected of all Professional Engineers.



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Professional
Engineers are
accountable for
their work.

If an error is found during the construction process, the construction engineer will determine the origin of the error. If the error is design related, it will then be determined whether a premium cost has been incurred because of the design error. Premium cost is the difference that the Department has to pay above and beyond the price of the required work if the error had not occurred. The process allows the design consultant an opportunity to respond to any claim of error or omission. It is up to the district's management staff to decide if they wish to recoup these costs from the consultant in question. This process is explained in [**Procedure No. 375-020-010, Identifying and Assigning Responsibility for Errors and Omissions by Design Consultants.**](#)

Project Closeout

The main aspect of project closeout is to ensure that there are no outstanding administrative issues and to ensure that all appropriate information is passed along to personnel who will be handling the construction phase of the project. It is important for the consultant PM to submit the final invoice as soon as possible, clearly marked as "final." Any funds remaining in the design phase need to be un-encumbered so that they can be cycled back into the Work Program. The FDOT PM must submit final grades for the consultant on a timely basis. Additionally, the design phase of the project must be completely closed out on federally funded projects before post design services can be initiated. At this time it is a good practice to review the project files to make sure they are in order and complete. A well-organized project file will pay dividends later if questions arise.

Another good practice is to set up a meeting with the construction personnel so that important information regarding the project can be passed along to those who are responsible for the construction aspect of the project. Issues such as R/W and access agreements need to be covered. Sometimes in the design process issues arise that may require special attention during construction. It is important to notify construction personnel of these issues before construction begins.

Internet References

Internet references cited in the chapter are linked directly in the text or can be found below.

- Procedure No. 625-000-007, Plans Preparation Manual, [Volume I](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 600*
 6. *Procedure No. 625-000-007*
- Procedure No. 625-000-008, Plans Preparation Manual, [Volume II](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 600*
 6. *Procedure No. 625-000-008*



- Design Standards
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Roadway Design*
 4. *Design Standards*
- Drainage Manuals
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Roadway Design*
 4. *Publications*
 5. *Drainage*
- Intersection Design Guide
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Roadway Design*
 4. *Publications*
 5. *Intersection Design Guide*
- Procedure No. 710-020-001, Utility Accommodation Manual
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 700*
 6. *Procedure 710-020-001*
- Basis of Estimates Handbook
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Estimates Office*
 4. *Basis of Estimates and Pay Item Information*
 5. *Basis of Estimates Handbook*
- Standard Specifications for Road and Bridge Construction
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Specifications Office*
 4. *Standard Specifications*
- AASHTO Publications
 1. <http://www.transportation.org/aashto/home.nsf/FrontPage>
 2. *Bookstore*
- Structures Design Office website
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Structures Design*
- Traffic Operations Office website



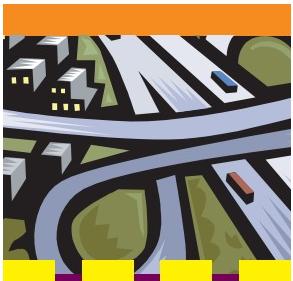
1. <http://www.dot.state.fl.us/>
2. *Doing Business With the DOT*
3. *Traffic Operations Office*
- [Roadway Update Memos](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Roadway Design*
 4. *Roadway Update Memos*
- [Utilities Office](#) website
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Utilities Office*
- [Sunshine State One Call of Florida](#)
 1. <http://www.callsunshine.com>
- [Public Involvement Handbook](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Environmental Management*
 4. *Publications- Public Involvement Handbook*
- [NCHRP Report 480, A Guide to Best Practices for Achieving Context-Sensitive Solutions](#)
 1. <http://gulliver.trb.org/>
 2. *Publications*
 3. *National Cooperative Highway Research Program (NCHRP)*
 4. *NCHRP Project Reports*
 5. *Report 480*
- [Context Sensitive Design](#) - National Website
 1. <http://www.fhwa.dot.gov/>
 2. *FHWA Web Sites*
 3. *Context Sensitive Design - National Web Site*
- Flexibility in Highway Design
 1. <http://www.fhwa.dot.gov/>
 2. *FHWA Web Sites*
 3. *Context Sensitive Design - National Web Site*
 4. *Publications*
 5. *Flexibility in Highway Design*
- Procedure No. 625-010-010, [Maintenance of Traffic Training](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 600*
 6. *Procedure 625-010-010*



- [Maintenance of Traffic](#)
 2. <http://www.dot.state.fl.us/>
 3. *Doing Business With the DOT*
 4. *Roadway Design*
 5. *Maintenance of Traffic (MOT)*
- Procedure No. 625-030-002, [Value Engineering Program](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 600*
 6. *Procedure No. 625-030-002*
- [Handbook for Preparation of Specification Packages](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Specifications Office*
 4. *Handbook for Preparation of Specification Package*
- [Master Pay Item List](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Estimates Office*
 4. *Basis of Estimates and Pay Item Information*
 5. *Master Pay Item List*
- Procedure No.325-020-010, [Identifying and Assigning Responsibility for Errors and Omissions by Design Consultants](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 300*
 6. *Procedure 325-020-010*



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 Right of way acquisition is expensive and time consuming.

 All projects require a right of way certification.

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CHAPTER 18

Right of Way

Project Managers (PMs) and the district right of way (R/W) professionals interact throughout the project development process. These individuals must closely coordinate activities from project conception through project development and environment (PD&E), design and construction. Although R/W professionals can be project managers, this chapter emphasizes what the PD&E, design and construction Project Managers must know about R/W actions to do their jobs properly.

The Florida Department of Transportation (FDOT) frequently must acquire property necessary to construct a transportation project. As a governmental agency, the FDOT has the power of eminent domain, which allows the taking of private property for a public purpose without the concurrence of the property owner. Numerous federal and state laws protect the property owner in this process. As a result, right of way acquisition is a fair but expensive and time-consuming process. The cost of right of way frequently exceeds that of construction, and right of way activities are frequently on the critical path of a project schedule. Project Managers throughout the project development process (including planning, PD&E, design and construction) must understand the importance of right of way considerations and ensure that the right of way professionals are involved early and throughout the process.

All projects are required to have a right of way certification prior to letting. The certification is a testament that the project is ready for construction from a right of way perspective (title has been acquired, all displaces have been relocated and all improvements have been removed or the removal has been included in the construction contract). A right of way certification is required for **all** projects, even if the planned construction is within current right of way.

Article X, Section 6A of the Florida Constitution says: "No property shall be taken except for a public purpose and with full compensation therefore paid to each owner." As an example of the importance placed on property rights in Florida, there are only two types of trials that require a 12-person jury: cases that may result in a death penalty and cases involving the taking of property through eminent domain. Applicable federal and state statutes and federal regulation include, but are not limited to:

- Public Law 91-646, United States Code (U.S.C.) 4601 et seq., Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, generally known as the Uniform Act.
- Title VI, Civil Rights Act of 1964, 42 U.S.C. 2000 et seq.
- Title 23 U.S.C. Transportation
- 49 Code of Federal Regulations (C.F.R.), Part 24
- 23 C.F.R, Part 710
- Chapters 73,74,119 and 337, Florida Statutes

The right of way phase of a project may include appraisal, acquisition, condemnation, relocation, clearing and certification. However, several other activities must be completed prior to initiating this process. This overview is generally in chronological order; however, some R/W activities may be performed concurrently. For more detailed information concerning the right of way process, see **Procedure No. 575-000-000, Right of Way Manual.**



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Many right of way activities take place before beginning the right of way phase.

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Pre-Right of Way Activities

Many actions must take place prior to starting the right of way phase of a project. The parties involved in surveying, mapping, design and R/W acquisition must coordinate closely to ensure success of the project. R/W experts can assist in identifying issues during preliminary and final design that could result in delays and excessive costs of litigation later in the R/W phase, if not corrected early. R/W is typically a major portion of the total project cost. Additional expenditures in the design and construction phases to avoid or minimize R/W may result in significantly lower total project cost and may be a wise expenditure of funds. Delays in the delivery of R/W maps and documents can result in a delay of R/W acquisition, which will probably delay the letting.

Surveys. A survey is often performed during the PD&E phase of a project. This survey provides the basic location information on the preferred alignment. Once the preferred alignment is finalized and as additional design information becomes available, more detailed surveys provide information such as profiles and cross sections. Survey information is necessary to develop final design plans and R/W maps.

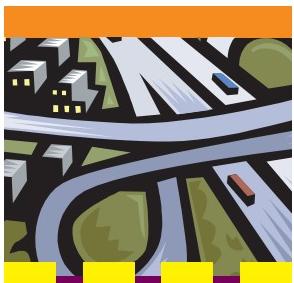
Conceptual Stage R/W Planning. This effort is typically started during PD&E and should be updated as the project progresses. It provides basic information about the upcoming right of way phase, such as the estimated number of parcels, businesses and relocatees. This plan can provide valuable information about the types of parcels to be acquired, the likelihood of business damage claims, the likelihood of litigation, the type of displacements that will occur and the extent and type of R/W clearing activities that may be required.

R/W Cost Estimates. The estimated cost of right of way is important for the alignment and conceptual design decisions that must be made during the PD&E phase. Cost estimates should be periodically updated to reflect changes in the real estate market. When the R/W estimate is prepared, the design Project Manager and the Right of Way Project Manager should meet to review possible design modifications that may help reduce potential costs. Updating is also necessary to recognize potential severance and business damages that become evident as the project progresses through preliminary and final design. The R/W estimate must include the costs of land, severance damages, relocation, business damages, R/W clearing, and attorney fees and costs. A current R/W cost estimate must be submitted as part of the package to receive Federal Highway Administration (FHWA) authorization to proceed with the R/W phase of the project when the project is to be federally funded.

Title Search. The title search determines the property boundaries and ownerships and addresses other land title issues on the project. The title search should begin as soon as possible during the R/W mapping process. Once property boundaries and ownership information is identified, it can be plotted on the R/W maps.

R/W Mapping. R/W maps are required to initiate the right of way phase of the project. They are essential for the accurate appraisal of the land and establishment of full compensation. R/W mapping begins when the project concept, the preliminary surveying and the preliminary engineering is complete. As the final design reaches 60% completion, R/W limits are identified. After completion of Phase II (60%) plans, the final R/W maps and preparation of required legal descriptions for title conveyance documents can begin.

Needs Assessment. This required assessment specifically addresses the relocation of displacees on the project. It is conducted as soon as relocatees can be identified, usually



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The right of way phase can begin after:

- Environmental documentation
- R/W mapping
- Preparation of an estimate
- FHWA authorization

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when the R/W limits are identified in the design plans. This assessment must be updated when the design is modified or relocation requirements change.

The Right of Way Phase

On projects with federal aid in the right of way phase, federal authorization is required prior to beginning any R/W activities. Any funds expended or costs incurred prior to federal authorization will not be eligible for federal reimbursement. The request for authorization to proceed with the right of way phase must be made to FHWA after completion of environmental documentation (discussed in Chapter 16 of this handbook) and completion of the R/W maps. A current R/W cost estimate must accompany the request. R/W phase activities include:

Appraisals. An appraisal is an estimate of the fair market value of the land and improvements to be taken, including severance damages. An appraisal report must be prepared on each parcel. The appraisal must comply with the Uniform Standards for Professional Appraisal Practice and 49 C.F.R. 24.103 and the Department's Supplemental Appraisal Standards. The property owner must be given the opportunity to accompany the appraiser during the inspection of the property.

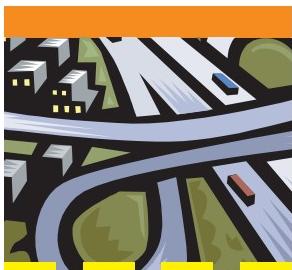
A review appraiser must review all appraisals to assure they meet appraisal requirements and to recommend approval of the appraisal as a basis for the establishment of compensation to property owners. This procedure must be done before an offer can be made to the property owner. A consultant may perform the review, but approval and establishment of compensation must rest with the Department. Compensation for the property to be taken may not be established in an amount less than the fair market value, as established by the approved appraisal.

Critical steps in scheduling the appraisal are the time required to hire the appraiser, prepare the appraisal, and complete the appraisal review and the approval process.

Acquisition. The following steps are required for the process of making an offer and negotiations:

- Negotiate in good faith with the owner and, if applicable, the owner's representative.
- Provide written notification of the project and recitation of the owner's rights.
- Provide a written offer of approved compensation to purchase the subject property, which may not be less than the fair market value as established by the approved appraisal.
- Provide a copy of the appraisal report, right of way maps and other documents to the owner if requested.
- Attempt through good faith negotiations to reach an agreement with the owner.
- Reimburse the property owner's reasonable attorney fees and costs, including expert fees.

Amount of Compensation. The Department must offer an amount for the land taken, improvements taken or damaged, and severance damages to the remaining property as established by the approved appraisal. The payment of business damages to a qualified business may also be required. The property owner's reasonable attorney fees and costs



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There are strict statutory eligibility requirements for business damages.

(including expert fees) and expenses incidental to the transfer of title must also be paid. The Department may not accept donations of property until the owner is advised of his/her right to an appraisal of the property and the right to receive compensation. The Department may not take any coercive action to induce an agreement on the price to be paid for the property.

Real Estate Closing. If an agreement can be reached as a result of these negotiations, then the parcel will be acquired through a real estate closing. Title will be voluntarily passed from the property owner to the Department in return for payment of the agreed upon amount. If an agreement cannot be reached, then a condemnation lawsuit must be filed and the property must be taken through eminent domain proceedings. If an agreement is reached in excess of the amount of approved compensation, the Department must provide written documentation in support of that amount. Final agency acceptance of the purchase agreement cannot be granted less than 30 days after the agreement has been executed.

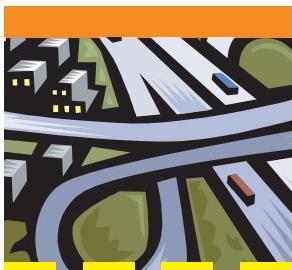
Business Damages. A qualified business may make a claim for damages to the business as a result of a taking. Business damages are not damages to the real estate, but rather damages to the profit-making capacity of the business. There are strict statutory requirements for a business to qualify for damages. The Department must give the owner written notice of the project and recitation of the owner's rights, but no initial offer is required. If the business intends to claim damages, it must submit a written offer to settle with the Department. Once notice has been given to the business owner, the Department may file a condemnation proceeding for the real estate taking.

Claims for business damages can result in exposure to large monetary claims. Early participation of R/W experts in the pre-right of way phases of the project can greatly reduce or mitigate these costs.

Condemnation. If negotiations fail, the property must be acquired through eminent domain proceedings in the circuit court. Resolutions by the agency identifying the public project and authorizing the condemnation of the parcels for the project are required. The agency cannot file a condemnation lawsuit until at least 30 days have elapsed from the date that the property owner received the written offer. An Order of Taking Hearing must be scheduled and conducted before the court. At this formal evidentiary hearing, the Department must prove that the project constitutes a public purpose, that the property to be taken is necessary for this purpose, and that the Department has established a good faith estimate of the value of the property based on a valid appraisal. If the court is satisfied with the evidence, an Order of Taking will be granted; and the Department must deposit the good-faith estimate of the value into the registry of the court. Upon deposit, title to the property transfers to the Department. The court may establish the term within which and conditions upon which the defendants will be required to surrender possession of the property. After transfer of the title, surrender of possession and removal of improvements, construction may begin. Jury trials to determine the amount of final compensation are held at a later date. Negotiations to agree upon compensation may continue until the jury renders a verdict on final compensation.

Close coordination should occur between the eminent domain attorneys for the Department and personnel involved with right of way mapping, design and R/W activities throughout the pre-right of way and negotiation phases.

The process of filing a lawsuit, securing an Order of Taking on the court docket (normally 90 to 120 days or longer) to the actual surrender of the property is a significant schedule consideration.



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PMs must
understand property
rights conveyed by
different acquisition
instruments.

Relocate Displacees. Relocation is a highly detailed program governed by the Uniform Relocation and Land Acquisition Policies Act (Uniform Act). Adherence to the requirements of the Uniform Act is mandatory. Failure to do so will jeopardize federal funding on the project. The program requires notification to persons and businesses displaced by the project, relocation advice and assistance, payment of moving costs, identification of decent, safe and sanitary replacement dwellings and payment of relocation housing costs. The time required by this process is a significant schedule consideration.

Clear Right of Way. All improvements on the property must be removed prior to construction, or the removal should be included in the construction contract. Improvements must be inspected for asbestos-containing materials (ACM) prior to demolition; and if ACM is found, it must be abated. The abatement of ACM may not be included in a construction contract. Any ACM present must be abated prior to letting a construction contract, even if the removal of the building is included in the construction contract. Federal law requires that the regulatory agency (Florida Department of Environmental Protection) be notified of the impending demolition a minimum of 10 working days prior to its start.

Certify Right of Way Clear and Ready for Construction. The Department may not advertise for construction bids until all necessary rights of way for the construction of the project have vested in the state. The District Right of Way Manager or the Assistant District Right of Way Manager must certify that all of the following are complete and that all activities were conducted in accordance with applicable state and federal laws, rules and regulations:

- Title to all R/W must be vested in the state.
- All displacees must be cleared from the project.
- All improvements must be cleared from the project or identified for removal in the construction project.

This certification is required for ALL projects. This certification is submitted directly to the Central Office of Right of Way. It is not included with the final plans package.

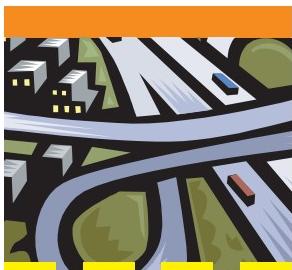
Acquisition Instruments

The Department acquires property interests through a number of acquisition instruments (conveyance documents), including deeds, perpetual easements and temporary construction easements. Project Managers should be familiar with the definitions of these various instruments and the property rights they convey, as found in [Section 4.1](#) of the **Right of Way Manual**.

Property Owner Contacts

Often property owners have heard and read much about a project before any representative of the Department officially contacts them. In many cases, their first contact is with technical people collecting data. While those working for the Department do have a right of entry, property owners must be treated diplomatically, with respect and sensitivity. Property owners should be contacted prior to entering their property, for any reason. Any entry onto private property must be done within the requirements of the law. If there is any question concerning the proper procedure, the district Right of Way Office should be consulted.

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R/W must be involved
in any contact with
property owners.

Project Managers frequently come in contact with property owners through public meetings, phone calls or personal visits. The emphasis on contacts should be to inform the property owner of plans and collect information that may be useful in the study or design. Statements that imply a decision or commitment from the Department concerning alignment, access, drainage or other design features should not be made. Conjecture and speculation about possible changes should also be avoided.

Under no circumstances may a Department representative discuss property value with an owner before an offer to acquire has been made. Only R/W personnel should discuss the R/W process with an owner or occupant. Any questions should be referred to the district R/W Office.

The district R/W Office should receive copies of any correspondence to a property owner. Any information learned by the Project Manager concerning affected property owners should be transmitted to the R/W Office because it may affect the cost of the property, the schedule or the relocation assistance required. The more information that the R/W Office has about a property owner's concerns, the better these concerns can be addressed.

The initiation of negotiations is an important event in the R/W process. Both the Department and the property owner prepare extensively for these negotiations. During negotiations, only the R/W negotiator should have any contact with the property owner. During negotiations, the R/W negotiator should not make any design commitments without approval of the design PM. If the parcel is in litigation, all contacts must be made through the Department's attorney.

The Right of Way process requires direct contact with the public. Complicated issues must be carefully explained. The taking of private property rights by the government is a highly sensitive matter. The relationship between the property owner and the Department is very important. It must be handled carefully and professionally. Property owners and displacees must be treated with respect and professionalism.

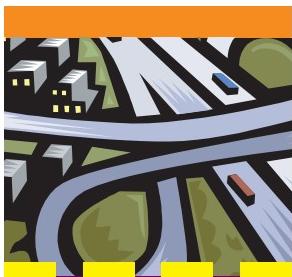
The Project Manager should refer any contact by property owners to the R/W Project Manager or Coordinator. The R/W Project Manager should be included in all discussions when a design change affects the land required or access to adjoining properties

Public Meetings

R/W representatives should be informed of all public meetings and encouraged to attend, particularly if the project involves R/W acquisition. A significant number of potentially affected property owners will be likely to attend public meetings and will have many questions, such as:

- How was the alternate alignment selected?
- How will the final alignment be selected?
- When are you going to build it?
- How can I sell my property in the interim period?
- What assistance will the state provide?
- When and how will I get paid for my property?

The public should have a clear understanding of the project development process and must have the opportunity to provide input on the decision to build or not build a project and the selection of the preferred alternative. It is important to take the time to explain



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Small adjustments in alignment can have major impacts on R/W costs.

the decision making process. Questions about the timing of the construction and the ability to sell a property in the interim are real concerns of the property owner. Potential purchasers of real estate are entitled to disclosure of pertinent facts concerning the property they are buying, such as the potential taking for a transportation project. If the project is not funded within the near future, there will be a concern about being financially impacted.

The Department has only a limited ability to acquire property in advance of the program year for R/W acquisition. Within funding constraints, it can buy hardship parcels and parcels located in developing areas to prevent additional costs. The type (federal or state), amount of funding, and other limitations all affect the possibility of using advance acquisition. Any questions concerning this possibility must be referred to the R/W Project Manager.

Alignment Issues

R/W costs are directly affected by location and design decisions. In addition to paying for the actual land and improvements taken, Florida law provides for the payment of business and severance damages when a portion of the entire tract is acquired. Replacing access does not preclude the possibility of damages if the owner can show that the new access diminishes the highest and best (not necessarily the current) use of the property. Small, seemingly unimportant adjustments in an alignment can minimize impacts on parcels to be acquired or improve the efficiency of takes. Such adjustments may greatly reduce R/W costs.

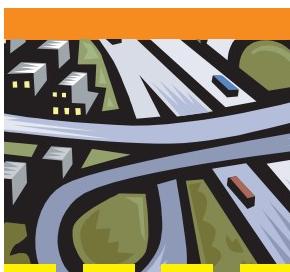
Severance damages may occur when less than the entire property is acquired. Damages to the remaining property caused by the taking must be compensated. The amount of the damage is calculated as any reduction in value of the remaining property caused by the acquisition of the property for transportation purposes. Examples are:

- Reduced size or altered shape of the remaining property.
- Changed usage of the property.
- Substantially diminished access as a result of the taking.
- Lost parking.

Through careful analysis, the appraiser can often reduce or even eliminate the amount of potential severance damages by "curing" the otherwise damaged remainder. This type of analysis is termed a Cost to Cure and is simply a feasibility analysis as to how much the cost would be to fix the damages caused by the taking compared to the amount of damages itself. Such cures are typically designed by sub-consultants working closely with the Department's appraiser. If the cost to cure is less than the estimated amount of potential severance damages, the owner is compensated for the cost of the proposed cure. Likewise, if the cost to cure exceeds the potential severance damages, the cure is deemed financially infeasible and severance damages are paid as part of compensation. In any event, the owner is not obligated to put any cure into place. The owner may elect to pocket the money (providing that the governing municipality allows the remainder to exist in the damaged condition) or invest in a cure different from that proposed by the appraiser.

When right of way requirements necessitate an entire property to be acquired, any potential severance damages and/or business damages are eliminated as there is no remaining property. Careful planning and early coordination with the district Right of Way Office can

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The design PM should work to limit access damages.

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often result in an optimum alignment and design that can help reduce costs through whole takings.

A qualified business may make a claim for damages to the business as a result of a partial taking. Business damages are not damages to the real estate, but rather damages to the profit making capacity of the business. There are strict statutory requirements for a business to qualify for these damages.

Non-monetary benefits obtained by the owner's attorney for his client can also be claimed. Examples include moving a drainage pond or providing median cuts for access, traffic signals and access not originally on the plans. These claims are often for substantial sums of money. The determination of a non-monetary benefit and its value has a direct relationship to the amount of attorney fees to be paid on behalf of the property owner. These claims can be minimized by careful and early coordination with the R/W Project Manager and the district General Counsel.

Under certain circumstances, there may be justification to acquire a property in its entirety, even though only a part is needed for the transportation improvement. This may be the case with properties involving business damages and other substantially damaged remainders. The only way to acquire a whole property when only a part is necessary for the project is through a negotiated settlement. The Department has legal authority to condemn only the part needed for the transportation facility. The Department does not have authority to condemn any remaining property. In cases of partial takings where a remainder property has little or no value or utility to the property owner (uneconomic remnant), the Department will offer to purchase the remainder in its entirety.

At times the design of a limited access facility will create a landlocked property (a parcel of land surrounded entirely by privately owned land, with no access to a public right of way). As soon as property boundaries and approximate limits of the limited access R/W are known, the Project Manager should ask the R/W Project Manager and the District R/W Surveyor to review each landlocked parcel remainder for possible access studies or acquisition as a whole take.

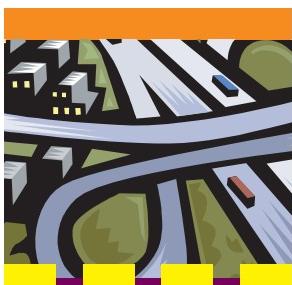
Procedure No. 625,000-007, [Chapter 12, Plans Preparation Manual, Volume I](#), contains detailed instructions on the establishment of right of way requirements.

All these issues must be carefully analyzed and considered throughout the development of a project. Many times what appears to be a minor taking can become a major expense. Adding new parcels near the end of the R/W phase will almost always extend the schedule.

Field reviews to identify concerns and solutions are very helpful at key stages, such as the 60% R/W map stage. Field reviews should include the design Project Manager, the R/W Project Manager, appraisers and land planners.

Access and Access Management

Access is a valuable property right. Owners must be compensated if access is removed, limited or substantially impaired as a result of the taking. Access issues differ according to property use: residential, commercial, a planned development or industrial. Modifying or moving access can diminish the highest and best use of a property, resulting in severance damages to the remainder and significantly increased costs. It is important to determine the highest and best use of adjoining property early in a project and then design access to support that use.



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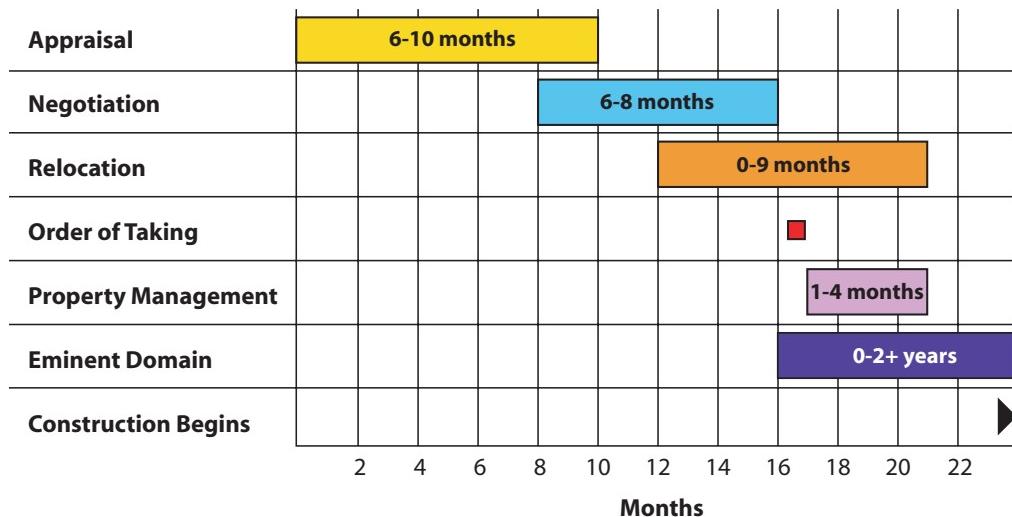
Many access issues are driven by access management criteria, which are important for the safety and capacity of the completed project. Access management issues should be coordinated with the PD&E and design Project Managers and the district Median Review Committee. There is frequently some flexibility in the application of these criteria that can be used to limit damages. At times an access reclassification may be necessary. The design Project Manager should work closely with the R/W Project Manager to carefully apply the access management criteria to achieve the objectives of safety and capacity while limiting access damages if possible. Property owners should be informed of potential changes in access, such as median closings early in the project.

Schedule

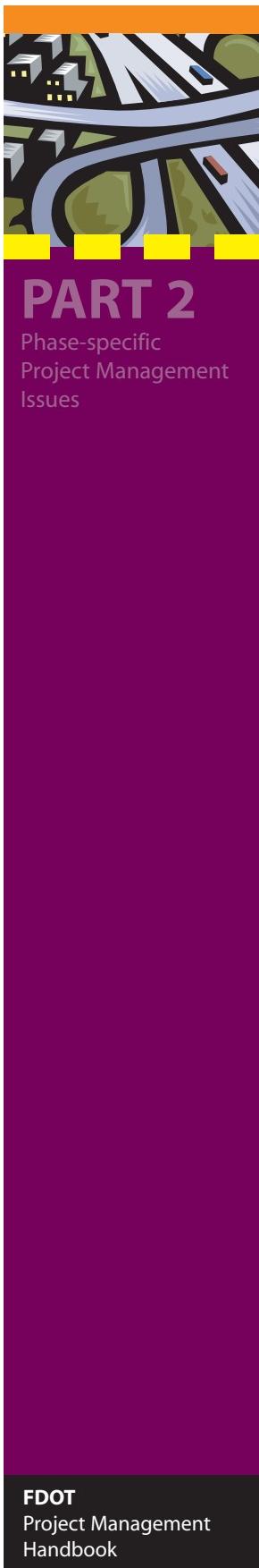
The time involved in performing the required right of way activities will depend to some extent on the number of parcels and complexity of the situations. Because of the many legal requirements, however, even the simplest taking cannot be accomplished quickly.

Figure 18-1

Right of Way Acquisition Process



(Maps and Documents to R/W Certification 18-24 Months)



Early Right of Way involvement is the key to staying on schedule with the project. Figure 18-1, shows typical durations for key right of way activities.

Internet References

Internet references cited in this chapter are linked directly in the text or can be found below.

- Procedure No. 575-000-000, *Right of Way Manual*
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Right of Way*
 4. *Right of Way Documents*
 5. *Right of Way Procedures Manual*
- Procedure No. 625-000-007, *Chapter 12*, Plans Preparation Manual, Volume I
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *600 Series*
 6. *Procedure No. 625-000-007*
 7. *Chapter 12*



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Quality of construction stays with a project long after completion.

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CHAPTER 19

Construction Project Management

This chapter deals with construction project management from the perspective of the Florida Department of Transportation (FDOT) and consultant construction engineering and inspection (CEI) managers. The Project Manager, whether FDOT or consultant, must concentrate on the four goals of a successful project:

- Fulfill project objectives. This includes completing the construction while minimizing negative impacts to the public and maintaining safe traffic control.
- Complete the construction project within the time specified.
- Complete the project within the funds allocated.
- Complete the project to the level of quality specified by the contract documents.

Of these goals, the one that lingers longest after job completion is the quality of construction, and it should not be sacrificed for the sake of the other three.

Perhaps more so than for any other project phase, fiscal responsibility must have a high priority on a construction project. Project Managers are responsible for very large expenditures of state and federal money. Projects must be managed properly in every respect. Accurate and complete documentation is imperative.



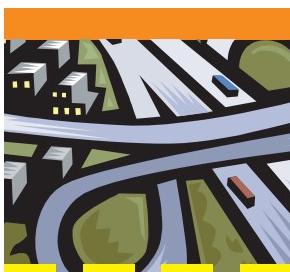
Source: FDOT

Construction Contract Management

The FDOT Project Manager in construction is known as the Construction Project Manager (CPM). This individual manages construction contracts either directly or through a CEI consultant, who has responsibility to manage the construction contract on behalf of the FDOT. The Construction Project Manager may be responsible for more than one construction project. Following trends in other areas, the FDOT now out-sources management of many of its construction contracts; it still manages a select few with its own in-house staff, however. The FDOT competitively selects consultant firms to provide CEI services on a specific construction project or group of construction projects. The CEI consultant furnishes a team of engineers and inspectors fully qualified for and certified in all areas related to their responsibilities, including sampling, testing and inspection. A Senior Project Engineer oversees the CEI team effort and is responsible for coordination and monitoring contract progress. The Senior Project Engineer may oversee more than one construction project for her/his firm.

It is important for both the Senior Project Engineer and the CPM to remember that the contractor is ultimately in charge of the construction effort. The contractor is obligated to provide the means, methods, and resources such as labor, equipment, materials and subcontract services and to complete the job as specified in the contract documents. It is very important to establish a positive working relationship through a Partnering Program or similar means at the very onset of the job. Communications, trust, documentation and coordination are just a few of the key ingredients that go into managing a successful project. Both the CPM and the CEI must work together to provide them.

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Construction involves three parties:

- FDOT
- The CEI
- The contractor

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There are many guidelines and manuals describing the relationships of the FDOT, CEI, and the contractor. These relationships will differ slightly from job to job. Both the Senior Project Engineer and the CPM must be very familiar with all contract documents. Reading and understanding them is essential. Two additional documents that must be thoroughly understood are the ***FDOT Standard Specifications for Road and Bridge Construction (Standard Specifications)*** and ***Procedure No. 700-000-000, Construction Project Administration Manual (CPAM)***. The Standard Specifications establish the relationship between the FDOT and the contractor. The **CPAM** describes the relationship between the FDOT and the CEI firm; it also describes the CEI management scope and procedures required on the job.

CEI Contracts

A construction project normally has three entities working together to achieve the project objectives of timely completion, within budget, and a quality product: the FDOT, the CEI and the contractor. The roles and responsibilities of each must be clearly defined and understood. For a project to run smoothly there must be clear leadership and coordination, without redundancy.

The CPM should concentrate on the performance of the CEI firm and its daily operations. She/He should be personally involved in the selection process, defining the type and

"...CEI firms shall be allowed to exercise their independent professional judgment...The role of the Department's Project Manager (PM) is to ensure that these CEI Firms are providing services in accordance with their Contract and not control the means and methods by which the CEI firm performs these services. Department procedures allow review and rating of such services and further provides for recovery of any errors or omissions made by the CEI firm."

Jose' Abreu, P.E.
Secretary of Transportation
February 6, 2004

number of personnel needed, qualifications required and other important selection criteria. The CPM should see that the selected CEI team is brought on board at the appropriate time and is fully familiar with the requirements of the contract and the scope of services to be provided. The **CPAM** describes CEI responsibilities in detail. In addition to monitoring CEI performance, the CPM reviews invoices and results of sampling and verification testing. It is particularly important that the CPM track the schedule and costs of the CEI and that the CEI track those of the construction contracts. He/She should coordinate other FDOT resources that may be required and key decisions that may be needed. The CPM is the primary resource for decisions outside the CEI Scope. The CEI does not have the authority over R/W or Utility conflict issues.

Both the **CPAM** and the CEI contract scope of services clearly define the responsibilities of the Senior Project Engineer. The Senior Project Engineer is to be totally involved with the



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The CEI should be on board before construction NTP and after the final inspection.

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construction contractor on a day-to-day basis, from pre-construction activities through project completion and final acceptance. The Senior Project Engineer must monitor and document the contractor's activities.

Scheduling the CEI Contract. The appropriate time to bring the CEI on board will vary according to the type of construction contract: that is, design-build, unit price, lump sum, and so forth. The CPM should decide the appropriate level of involvement in any pre-letting activities such as plans review and comments, determining contract duration and recommending appropriate alternative contracting techniques. There are many good reasons to involve the CEI firm early in the process. The CEI firm's input in the early stages of a project can result in a more constructable project and thus lower construction cost.

The Work Program establishes the bid-letting date well in advance. Following this date, the contract is generally awarded within 50 days. The contractor executes the contract documents within 20 days following award of the contract. Once the contractor returns the contract documents, the FDOT has 15 days to execute them. The construction contractor's Notice to Proceed (NTP) is generally issued within 30 days following contract execution by both parties.

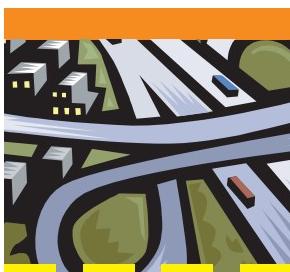
The CEI firm should be on board well before the NTP for several reasons. It is not unusual to issue the NTP at the pre-construction conference, which is generally chaired by the CEI firm. Also, notices must be sent to all who will attend the pre-construction conference well in advance of the established date. The CEI team must have time to mobilize, assign personnel, establish office space (with telephones, computers, and other necessary supplies) and obtain necessary vehicles for project staff. The CEI firm should be selected and on board well in advance of the construction contractor's NTP to ensure that the project gets off to a good start.

Similar allowances must be made at the end of the project. To consider final measurements and estimates, final inspections, warranties and guarantees, claims, as-builts, and other documentation and demobilization efforts at the end of a job, the CEI will need time beyond construction project completion.

Lump Sum CEI Contracts. The conventional method of CEI contracting is a cost plus fixed fee type contract, where the CEI is paid for the actual hours worked in each employee classification and all expenses are clearly defined and documented. Lump sum contracts are also used for CEI services. The CPM should consider the risks and rewards possible for the CEI firm under a lump sum contract. If the project goes well and is completed on or ahead of schedule, the CEI firm is rewarded for contributing to an efficient operation. If a project does not go well and there are substantial time overruns, the CEI firm must absorb the additional costs. Once the lump sum fee is established, it can be renegotiated only under certain specified and pre-determined conditions.

It is important to select projects carefully for this contracting method to minimize risk to both the CEI and the FDOT. The following types of construction projects are most appropriate for a lump sum CEI contract:

- Design-Build or Lump Sum Construction Contracts
- Contracts that include incentives for early completion
- Corridor Projects with sufficient history regarding time and cost changes
- A construction project with a clearly defined scope and minimum variables



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The real challenge is when things do not go as planned.

When a lump sum CEI contract is used, the selected CEI firm should be provided with as much information as possible about the project, the contractor and the project schedule prior to negotiating the lump sum fee. Prior to fee negotiations, the FDOT should have provided the consultant with as much information as possible about the project, the contractor and the project schedule.

From the FDOT point of view, the lump sum fee for CEI services is much easier to administer and monitor. Percentage payments should track the construction progress.

Comparisons between more traditional and lump-sum CEI contracts are still being made. CEI consultants have concerns about the risk associated with these contracts, but they find the administration and documentation much easier. Guidelines for CEI lump sum contracts can be found on the [Construction Office](#) website.

CEI Responsibilities. The CEI consultant responsibilities are defined in the contract scope of services, which should be tailored to meet the special needs of each project. Generally, the CEI firm is responsible for administering the construction contract to ensure the project is constructed on time, within budget, with the specified quality and in reasonable conformance with the contract documents. The Senior Project Engineer represents the FDOT to the construction contractor and reports to the CPM regarding construction progress. The CEI must report any actions on the part of the contractor that raise suspicion of illegal or inappropriate activities.

The Construction Office maintains a standard [CEI Scope of Services](#). This standard scope of services of the CEI consultant should be modified so that it is specific to the needs of the project. In general, the responsibilities in the scope are derived from two basic documents, the CPAM and the Standard Specifications. The CPM should refer to these documents when preparing the scope of services. The Senior Project Engineer must be fully aware of the provisions of these documents and the scope of services.

CEI Management Issues. The CEI's first priority is the full-time administration of the construction project assigned. However, the resources for accomplishing this work are limited. The Senior Project Engineer must establish a list of critical items and events needed to meet the requirements of the project and then reasonably allocate the necessary resources to accomplish the project objectives at a profit for the CEI firm.

Management of a CEI contract is a challenge. Because of the task at hand and limited resources, the Senior Project Engineer must plan the day-to-day operation of his office carefully in order to meet or exceed the requirements of the FDOT and accommodate the contractor's construction operations to avoid any delays to the work. This operation can be rather routine. The contractor provides a schedule for all work activities, and the CEI meets that schedule with the necessary resources.

The real challenge for the Senior Project Engineer is managing situations when things do not go as planned. For example, schedules are delayed, costs tend to overrun, the contractor files notices of claims and unexpected site conditions are found on the job. The Senior Project Engineer must overcome these obstacles in a positive, economical manner while



Source: FDOT



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The CAP should address construction activities.

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protecting the interests of the Department. Problems can be avoided or minimized by looking ahead on a project to anticipate possible problems and identifying potential solutions. Problems must be identified early and solutions aggressively sought.

On cost plus fixed fee contracts, it is particularly important for the CEI to track costs carefully. If it appears that contract limits will be exceeded, a request for fee increase must be submitted in sufficient time to negotiate a new fee and execute the necessary contract modification before costs actually exceed the current contract amount. The CEI cannot be reimbursed for costs that exceed contract limits. It is the Senior Project Engineer's responsibility to take these actions.

Community Awareness Plan (CAP)

A CAP should be developed during the design phase of the project (see Chapter 17 of this handbook). The hand-off from design to construction should include the CAP. The CPM and the Senior Project Manager should review the CAP and update it as necessary to make it useful during design. The CAP should be a factor in selecting the contracting method to be used, as discussed below. Construction phase CAP actions to be considered include:

- Mass mailings with information on construction dates and specific traffic impacts that are expected.
- Pre-construction public information meetings to allow the public to review the plans and ask questions.
- News releases.
- Information flyers.
- Specific business access issues.
- Methods of dealing with complaints and inquiries from the public.

Alternative Contracting Methods

The method of contracting work on a particular project will, to some extent, dictate how the project should be managed. The FDOT has experimented with and continues to practice various methods of bidding for and awarding a construction contract to achieve a specific goal. Detailed information on alternative contracting methods can be found on the Construction Office website, [Alternative Contracting](#) page and [Section 1.2](#) of the **CPAM**. FDOT has used the following methods of project delivery in the bidding and awarding process:

Unit Price. This method is the most common FDOT delivery method. Both the construction time and quality are specified, and unit prices are established in the bid for various items of work. The total cost is determined by extension using estimated quantities. Final costs are based on physical measurements of the quantity of work performed in each item of work.

Lump Sum. Time and quality are established in the bid documents, but the bidder determines the quantities of work and the cost and submits one bid price for all work required. This type of contract eliminates the need for final measuring of the job quantities.

Design-Build. This contract is based on a selection procedure that considers qualifications, costs and other factors. The major benefit of design-build is a significant reduction

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Alternate contracting
methods are used to
achieve specific
goals.

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in the overall project delivery time that results from the overlap of design and construction. Design-build is discussed in detail in Chapter 20 of this handbook. Demands on the CPM and the CEI, both in the selection process and the actual monitoring of the contract, increase for this type of contract. Since the contractor in this case is responsible for design, QA/QC should be emphasized.

Bid Averaging. This method is one of the few that address cost. Instead of the traditional low bid, certain high and low bids may be thrown out; the remaining bids are used to calculate an average cost (bid). The project is awarded to the bidder closest to this average cost.

Lane Rental. This method is useful in minimizing traffic impact of a project, particularly if the project will require frequent lane closures. Part of the bid is a rental rate for lane closures: a cost per lane per length (mile) per unit of time (hour or day). This strategy provides an incentive for the contractor to find ways to avoid or minimize lane closures, and when necessary, to minimize the time involved. The contractor is rewarded for keeping traffic lanes open as much as possible throughout the construction period.

Incentive/Disincentive. This concept of contracting is designed to reduce the overall contract time by giving the contractor an incentive for every day the contract is completed early and a disincentive for failure to complete a project on time. The amount of incentive/disincentive is established by FDOT in the bid package. A benefit-cost analysis is required to establish the incentive amount. [Section 1.2](#) of the **CPAM** discusses the required procedure.

No Excuse Bonus. This method provides a monetary incentive bonus for the contractor who completes the project early within a specified time, regardless of any problems or unforeseen conditions. No time extensions are allowed for purposes of this bonus. This method normally would be used for major work with severe community impacts.



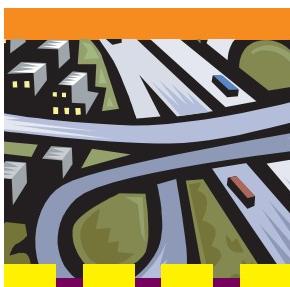
Source: FDOT

Liquidated Savings. This method awards the contractor for each calendar day the contract is completed and accepted prior to the expiration of allowable contract time. Contract time is adjusted for time extensions. The amount of award is based on the direct savings to the Department related to CEI and contract administration costs.

A+B Bidding. This method enables a contractor basically to establish his own construction time. Generally but not always, the bidder who can complete the project in the shortest time will be successful because a value is fixed in the bid process for each day of construction. This method normally is used on controversial projects with significant impacts to traffic or property access.

Figure 19-1 compares the advantages of these various bidding procedures.

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Warranty
specifications hold
the contractor more
accountable for
assuring service life.

Figure 19-1
Potential Benefits of Bidding Procedures

| Contracting Technique | Potential Benefits | | | | | | |
|------------------------|------------------------|--------------------------|----------------------------|---------------------|-------------------------|-----------------|------------------|
| | Reduce Traffic Impacts | Reduce Community Impacts | Minimize Construction Time | Minimize Total Time | Minimize Administration | Minimize Claims | Maximize Control |
| Unit Price | | | | | | | ● |
| Lump Sum | | | | | ● | | |
| Design-Build | | | ● | | ● | ● | |
| Bid Averaging | | | | | ● | ● | |
| Lane Rental | ● | | | | | | |
| Incentive/Disincentive | ● | ● | ● | | | | |
| No Excuse Bonus | ● | ● | ● | | | | |
| Liquidated Savings | ● | ● | ● | | | | |
| A+B Bidding | ● | ● | ● | | | | |

Warranty Specifications

The FDOT has developed performance-based warranty and guarantee specifications that are now being incorporated in design-build projects and all asphalt and concrete pavement projects. Even in the more traditional contracting methods, specifications are used to establish a minimum performance life for such items as pavement life, bridge components, turf establishment, traffic striping (reflectivity and life), landscaping and signalization. The contract specifies that the contractor provide these assurances.

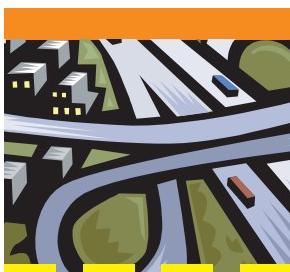
Under these specifications the contractor assumes a much greater role in the quality control, production and testing of the work items in which she/he has such a vested interest in assuring their service life.

The CPM must be familiar with the warranties/guarantees used in the contract documents. The CPM should also be prepared to make recommendations regarding inclusion of these performance requirements in certain projects. The inclusion of these requirements, which may require additional effort in the inspection and acceptance and the quality assurance testing, should enhance the project life. The Specifications Office website contains guidelines on [Performance Based, Warranty and Guarantee Specifications](#).

Plan Revisions

During the course of construction, certain revisions to plans are permissible under certain circumstances without voiding the construction contract. [Section 4.3](#) of the Standard Specifications, Alteration of Plans or Character of Work, deals specifically with this issue.

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 Read the environmental permit conditions.

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This topic is also covered in Section 7.3.6.3 [Chapter 7](#) of the **CPAM**, and Section 3.5 of **Procedure No. 700-050-010, Preparation and Documentation Manual**. These last two references, however, are not construction contract documents to be enforced on the contractor.

The need for plan revisions is anticipated in the contract documents. Reasons for revisions include but are not limited to the following:

- An increase, decrease, or actual alteration in the work
- Extra work assigned under the contract
- Differing site conditions found in the field
- Value Engineering Change Proposal (VECP) submitted by the contractor, the FDOT or the CEI

When faced with a potential plan revision, the CEI should research the referenced documents, determine if costs or time are involved in the plan revision, and respond promptly so that the contractor's progress on the project is not impeded. The procedures to follow are all carefully detailed in the references. In no case should the contractor be allowed to proceed with any plan revision until written approval is issued. It is important that all significant changes made during construction be documented in the final as-built plans, as discussed in [Chapter 4](#) of the **Final Estimates Preparation and Documentation Manual**. This reference should be followed in making any changes in final quantities and changes in the design that are reflected in the final estimate for the project.

Permits and Other Commitments

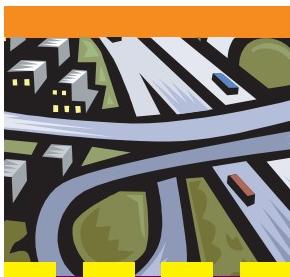
The CEI is responsible for ensuring compliance with environmental permits and for ensuring that environmental commitments made during the project development are honored. The CPM and the Senior Project Engineer must be aware of requirements and conditions specified in permits. These will usually focus on measures to protect wetlands, wildlife and water quality. Other commitments may include socio-cultural commitments made to federal, state and local agencies, organizations and citizens groups. Examples include construction noise controls, dust control, maintenance of traffic issues and accommodation of special events. Provisions for these commitments should be included in the contract documents.

All utility permitting must be coordinated and managed in accordance with the district-established schedule. At some point in the design phase, all utility permitting coordination is turned over to the district Construction Office. These are in turn included in the CEI review responsibilities for a project. The CEI provides recommendations, but the Maintenance Office approves or denies the permits.

Alternate Designs

The CEI may be challenged on the construction project by the submittal of an alternate design by the contractor. Alternate designs are generally submitted for one or more of these three objectives: project cost, project time or project quality. Therefore, they should be carefully and promptly considered, with a written response to the contractor. Contract documentation must be included if the submittal has been approved.

The contractor frequently offers alternate traffic control plans. [Section 102](#), Paragraph 4 of the Standard Specifications, appropriately entitled Alternative Traffic Control Plan,



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Know the process for
involving the EOR.

describes the procedures and requirements governing such an alternate design. As with most contractor submittals, a specialty engineer is required to sign and seal the plans prior to submittal. The Senior Project Engineer must respond to these submittals in a timely manner.

A Value Engineering Change Proposal (VECP) could also represent an alternate design submittal by the contractor. These proposals have been discussed earlier. A timely response is of great importance.

Coordination With the Engineer of Record

The Senior Project Engineer should have on-going coordination with the FDOT design Project Manager and the Engineer of Record (EOR) throughout project construction. The EOR is the designer of the project who was responsible for the preparation of the contract documents. The term "Engineer," mentioned in the contract documents refers to the State Construction Engineer, or his designee, not the EOR.

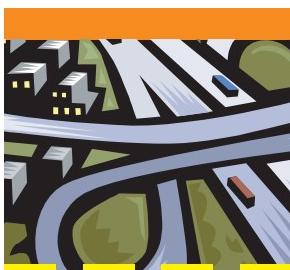
The Senior Project Engineer should remember that the FDOT design PM and the EOR have been involved in the project through the design phase. They can explain the history of the design and how it evolved into the final construction phase. Generally, design contracts include some post-design (construction) services. The CPM or CEI must understand the contractual issues related to obtaining the services of a consultant EOR. Usually the FDOT design PM must approve any chargeable services provided by the EOR. Consequently, it is important to work with the FDOT design Project Manager to establish the appropriate protocol for communication. The EOR should prove to be an excellent resource for the CPM and the Senior Project Engineer throughout the construction period.

The FDOT design PM and the EOR should be invited to the pre-construction conference, the partnering meeting, and at least to the earlier on-site construction progress meetings to establish open and direct lines of communication. The FDOT design PM and the EOR must be notified immediately upon discovery of any design-related issue and must be involved in its resolution. The CPM's role includes monitoring the EOR's responsiveness during the construction period. The EOR must review and approve shop drawings submitted by the contractor within the allotted contract time, review and approve any contractor-proposed design changes, evaluate and respond to Requests for Information (RFI) or VECP submitted by the contractor, and address any other design-related issues.

A good working relationship between the Senior Project Engineer and the EOR is, therefore, very important. Many of the EOR duties and responsibilities mentioned above have a direct impact on the project schedule. Communications must be clear and open. Contract deadline dates outlined in the documents should be well known, and they should have been discussed. The CPM or Senior Project Manager should provide as much lead-time as possible to the EOR.

Construction Quality Control Testing

The FDOT has recently implemented changes in the construction specifications that shift more of the construction quality control responsibilities to the contractor. This change is a departure from past practice where the FDOT was responsible for all sampling and testing procedures. The new approach, known as Contractor Quality Control (CQC), was developed over several years and is still being refined on construction projects today. There is much information available on the program in the contract documents, which the CPM should review in detail.



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Construction-to-maintenance is the last hand-off.

Before starting any new construction project, the contractor is required to submit a Quality Control Plan to the FDOT for review and approval. There is not much leeway in the contractor's submittal, since the requirements are spelled out throughout the Standard Specifications particularly in [Section 105](#). Contractor Quality Control General Requirements. The Plan must specify how the contractor is to assure a quality job in all phases of materials handling including, but not limited to: procurement, hauling, fabricating, stockpiling or storing, and producing.

The Senior Project Engineer must be aware of the many FDOT testing requirements. All tests must be met, and the contractor is responsible for having all sampling and testing on the project performed by FDOT certified personnel. The contractor may employ an independent certified laboratory, train his/her own personnel or use a combination of both methods to perform the required sampling and testing. To expedite training for the CQC program, the FDOT has contracted with the University of Florida to implement its training and qualifications program for construction technicians and contractor personnel. This program is better known as the Construction Training/Qualification Program (CTQP). The contractor's Quality Control Plan (including certifications) is reviewed and approved by the FDOT prior to the start of the job.

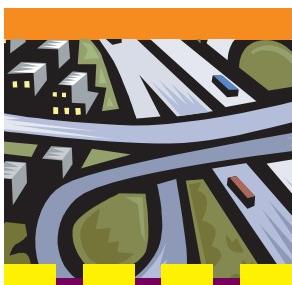
Despite this innovative approach to Florida road and bridge construction, the FDOT still maintains the right to perform any inspection and sampling and testing on the project it considers appropriate to verify the results submitted by the contractor on any materials or process. This procedure is known as verification testing, and it may be performed on a random-sampling basis.

The State Materials Office and the State Construction Office have combined all pertinent contractor Quality Control information and requirements on the [Contractor's Quality Control](#) website. Again, the **CPAM** covers the entire scope of sampling and testing requirements for construction projects and provides excellent guidelines on how it is best implemented

Coordination With the District Maintenance Office

At the end of the construction phase, all projects are transferred to FDOT maintenance for operations. The district Maintenance Office provides continual inspection, repair and rehabilitation necessary to keep the project functional and safe. Since maintenance is the ultimate "owner" of the roadway, the appropriate maintenance personnel should be involved in the project throughout its many phases - PD&E, design, and construction. The Senior Project Engineer should work to keep the appropriate maintenance personnel involved throughout the construction phase. Utility permits must be coordinated with the district Maintenance Office.

The Senior Project Engineer should begin by inviting the appropriate maintenance personnel to attend the pre-construction meeting as part of the team. During the course of construction, maintenance personnel should be invited to tour the project and witness the construction procedures. Except as allowed in [Procedure No. 850-000-005](#), [Maintenance Responsibilities on Construction Contracts](#), the construction contractor will maintain the project until final acceptance by the FDOT. The acceptance procedure includes a final "walk-thru" by the contractor, CEI (if assigned on the project), CPM and maintenance personnel. At this time all questions should be answered and concerns addressed. Appropriate maintenance personnel should be involved in final acceptance of the project, which will then be assigned to them.



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Project closeout is an important part of project management.

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Project Closeout

There are many important actions that must take place to properly close out a construction project, including:

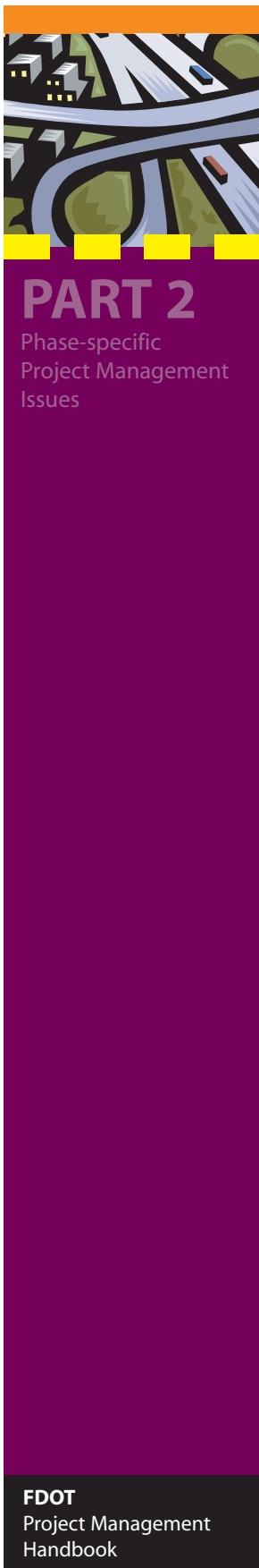
- A thorough research of the contract and Standard Specifications to identify all of the documentation required from the contractor and ensure that all are submitted and accepted
- Submittal, review and acceptance of the final estimate
- Final payment to the contractor
- Identification of potential claims
- Preparation of as-built plans
- Final acceptance letter
- Final contractor grades
- Preparation of the files for storage
- Submittal of a final invoice by the CEI
- Submittal of final grades for the CEI

[Section 12.1](#) of the **CPAM** discusses final inspection and acceptance procedures

Internet References

Internet references cited in the chapter are linked directly in the text or can be found below.

- Procedure No. 700-000-000. [Construction Project Administration Manual](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 700*
 6. *Procedure No. 700-000-000*
- [Standard CEI Scope of Services](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the FDOT*
 3. *Construction Office*
 4. *Specialized Areas*
 5. *Consultant CEI*
 6. *Scope of Services*
- [Alternative Contracting Methods](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the FDOT*
 3. *Project Management, Research & Development Office*
 4. *Programs- Alternative Contracting*
- [Performance Based, Warranty and Guarantee Specifications](#)
 1. <http://www.dot.state.fl.us/>



- 2. *Doing Business With the DOT*
- 3. *Specifications Office*
- 4. *Other Links of Interest- Performance-Based, Warranty and Guarantee Specifications*
- Procedure No. 700-050-010, [Preparation and Documentation Manual](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *Series 700*
 6. *Procedure No. 700-050-010*
- [Contractor Quality Control](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business With the DOT*
 3. *Construction Office*
 4. *Specialized Area*
 5. *Contractor Quality Control*



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The design consultant is in a different role as part of a design-build team.

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CHAPTER 20

Design-Build Project Management

In 1995 the Florida Department of Transportation (FDOT) began using Design-Build procurement on limited types of projects. The process is gaining acceptance and becoming more common. There are many unique features of Design—Build (DB) projects that affect the roles of the FDOT Project Manager, the consultant designer, and the contractor. The primary reference for FDOT DB projects is **Procedure No. 625-020-010, Design-Build Procurement and Administration**. The role of the FDOT Project Manager in DB projects is discussed in Section 3.1 of that reference. Another excellent reference is the **Design-Build Guidelines**.

Unique Features of Design-Build Projects

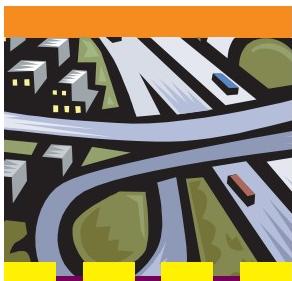
Basically, DB combines into a single contract the design, construction, and in certain cases, the construction engineering and inspection (CEI), and acceptance requirements of a project—all in accordance with the appropriate FDOT contractual documents. Until July 1, 2005, right of way services may also be included in design-build projects. These projects allow the contractor to participate in the design in an effort to reduce costs and expedite construction. It is important for the DB Project Manager (PM) to understand some of the benefits that the FDOT can expect by using this particular delivery method:

- Completing projects early as a result of concurrent design and construction activities.
- Reducing the number of supplemental agreements and change orders during construction.
- Eliminating supplemental agreements in consultant design contracts.
- Shifting at least some liability from FDOT to the contractor.
- Minimizing claims.
- Reducing the costs of consultant design fees and consultant inspection fees.
- Reducing FDOT administration costs.
- Encouraging the use of innovative techniques.

The design consultant is placed in a totally different role as part of a DB team. The contractor is ordinarily the lead partner in the team. The designer finds himself in the role of partner, and he must coordinate his design with the contractor who ultimately builds the project. The designer is required to consider the contractor's recommendations for possible inclusion in the design and must closely coordinate design with construction activities. Because construction generally starts in advance of the completion of design, close coordination between the contractor and designer is required. Simultaneous work on design and construction is what shortens the project time.

The DB PM should be aware of the types of projects usually selected for DB consideration. Such projects would include those that:

- Demand an expedited schedule and can be completed earlier than by normal procurement.
- Require minimum right of way acquisition and utility involvement.



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There are two DB
procurement
processes.

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- Do not require complex environmental permitting.
- Have a well-defined scope for all parties (design and construction).
- Have room for innovation in the design and/or construction effort.
- Are low in risk of unforeseen conditions.
- Have a low possibility for significant change during all phases of work.

Procurement Process

The FDOT Project Manager for a DB project should be familiar with the specific procurement processes. The Construction Office maintains a [Design-Build](#) website with extensive procurement information. These processes are explained in detail in **Procedure No. 625-020-010, Design-Build Procurement and Administration**. Section 4 of this procedure describes the Adjusted Score Design-Build Process (ASDB), while Section 5 covers the Low Bid Design-Build Process (LBDB).

The ASDB process includes the following steps:

1. Project identification
2. Development of pre-qualification requirements
3. Development of design and construction criteria
4. Contract number assignment
5. Encumbrances
6. Advertisement
7. Letter of interest
8. Long list development by Technical Review Committee (TRC)
9. Short list development by Selection Committee
10. Stipends for unsuccessful short listed firms
11. Preparation of Request for Proposals
12. Pre-bid meeting for short listed firms
13. Proposals submitted
14. TRC evaluation of proposals
15. Award of contract by Selection Committee
16. Preparation of contract documents

Steps 1 through 6 in the LBDB selection process are identical to those steps in the ASBD process; thereafter the procedures vary. The LBDB includes the following steps:

1. Project identification
2. Development of pre-qualification requirements
3. Development of design and construction criteria
4. Contract number assignment
5. Encumbrances



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 The overlap of design and construction makes scheduling a challenge.

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6. Advertisement
7. Pre-bid meeting for LBDB firms
8. Issue Request for Proposal (RFP) package to LBDB pre-qualified firms
9. Preparation of proposals
10. Submission of proposals by short listed firms
11. Bid opening for LBDB
12. TRC evaluation of responsiveness of proposals
13. Awarding of contract to firm with lowest responsive bid

In both cases, the award is made to the lowest responsive and responsible bidder, price and other factors considered. The FDOT Project Manager plays an important role in maintaining continuity and keeping communications flowing throughout the entire selection process, whichever procedure is used.



Source: FDOT

Scheduling

Scheduling projects for DB procurement is unique in that the design and construction will overlap substantially. Once concepts and preliminary plans are completed and reviewed, the designer then starts on the final design plans. Construction can usually begin when the final plans are about 60% complete. Each project is unique, however, and the design-construction overlap will vary.

Under conventional procedures, the design is completed by a consultant under direct contract with the FDOT. Then the project is advertised for bids from contractors. This end-to-end process is time consuming, but it provides excellent review and modification time. The DB process provides an overlap of the design-construction effort by establishing the contract document criteria for both at the same time.

The DB PM should establish clear benchmarks and other criteria to measure progress (and payment) in the project schedule. Tracking these projects is of utmost importance since product delivery time is one of the major advantages of the DB process.

Coordination Issues

The FDOT Project Manager on a DB project will be responsible for coordinating the procurement of DB services as well as overseeing the engineering, inspection, and construction of the project. These responsibilities are clearly outlined in Section 3 of **Procedure No. 625-020-010, *Design-Build Procurement and Administration***, which provides an excellent resource for the DB Project Manager. The FDOT Project Manager is responsible for coordinating the procurement of the DB services as well as overseeing the CEI of the project. A team approach, with a PM from production and a PM from operations/construction, is a viable way to fulfill the responsibilities of this role. Some of the responsibilities listed in the referenced document are:

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The designer is
responsible to design
in accordance with
FDOT standards.

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- Developing the Design Criteria package and RFP.
- Working with contracting unit and other appropriate offices in establishing the pre-qualification categories.
- Working with the contracting unit and others in developing the advertisement.
- Coordinating with FHWA representative on oversight and exempt projects.
- Participating on the Technical Review Committee in developing the longlist of DB firms.
- Participating in development of request for proposals.
- Working with contracting unit in responding to inquiries from DB firms.
- Participating in pre-bid meeting.
- Coordinating TRC evaluation of technical proposals.
- Coordinating submittal of technical evaluations to selection committee.
- Providing FDOT liaison with DB firm during construction of project.
- Coordinating FDOT review of DB firm submittals during design and construction.
- Making periodic site reviews.
- Reviewing and approving progress payments.
- Monitoring Minority Business Enterprise (MBE)/Disadvantaged Business Enterprise (DBE) participation.
- Ensuring that all final documents are received by FDOT.
- Ensuring proper CEI during construction.
- Working with others to develop supplemental agreements, if required.
- Ensuring that the DB firm's Quality Control (QC) Plan is followed.
- Ensuring that environmental commitments are followed through.
- Ensuring that each step in the process is properly documented.
- Furnishing DB firm with all FDOT standard forms and documents.
- Conducting performance evaluations.

Design Issues

Most designers find that DB is a dramatic departure from the traditional design-bid-build project. Normally the contractor is the lead organization in the procurement process for a DB project. Therefore, the design consultant's client is the contractor rather than the FDOT. The designer must complete the design under different schedule pressures. There will be constant pressure to deliver a design that will result in the lowest possible construction cost while meeting the project scope. At the same time, the designer has a professional responsibility to design the project in accordance with FDOT standards and procedures. The roles and responsibilities of the designer and the contractor must be clear from the beginning. Consultants who have been most successful in the DB arena are very careful about teaming arrangements and have solid agreements about performance and delivery expectations. The process demands good communication between the designer

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Bring the oversight
CEI in early.

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and the contractor throughout the project. The contractor and CEI staff must know the schedule for completion of elements of the design so that they can plan appropriately. The designer must be very careful about design changes during the project that may affect permits that have been obtained from and agreements that have been made with local agencies, utilities and others.

Right of Way Issues

Section 8 of the [Design-Build Guidelines](#) and [Chapter 14](#) of the [Right of Way Manual](#) discuss in depth right of way on DB projects. Right of way services may be included in DB projects until July 1, 2005. After that time, right of way must be contracted for separately. If right of way is required for the project and is being acquired outside the scope of the design-build contract, coordination and schedule control become essential to the success of the design-build project. The design-build contract must allow sufficient time for right of way acquisition in accordance with state and federal requirements, giving consideration to court schedules that are outside the Department's control. The district Right of Way Office must be informed regarding contractual obligations, the impact of delays, and the potential for contractor claims if right of way is not available when needed for construction to proceed.

Prior to advertisement, existing right of way must be verified and a determination made as to whether or not the project can be built within the existing right of way. All projects must have one of two types of certification of right of way prior to advertisement:

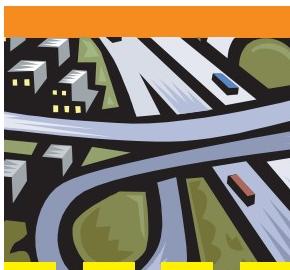
- The certification for construction shall state either no additional right of way is required or that right of way was required and all activities have been completed in accordance with applicable federal and state regulations.
- The certification for authorization and advertisement shall state that additional right of way is required and the necessary processes and procedures are in place to address right of way issues.

If a certification of authorization and advertisement has been issued, a right of way certification for construction must be executed prior to beginning physical construction. Right of way may be certified on any portion of the project that is determined to be a buildable section.

Construction Engineering and Inspection (CEI) Issues

When the DB contract includes the CEI requirements in the scope, the FDOT hires a separate CEI firm to provide oversight services directly for FDOT. These oversight services may be minimal, but they should provide assurances to the PM that the construction is being performed properly. The oversight CEI firm should be brought on-board well in advance of the project start. Six months are recommended. It is also recommended that, as a minimum, the oversight CEI provide a monthly report to the FDOT outlining progress made, problems that have occurred, corrective actions proposed/implemented and the status of corrective actions. The purpose of this report is to provide the FDOT with a summary of CEI efforts and to enhance accountability. The CEI cannot be a part of the DB team if the project is federally funded unless specific authorization has been received from FHWA.

When an independent CEI firm is selected to provide these services for the FDOT, the selection criteria must clearly define the services and requirements of such a contract. The services may include construction inspection, off-site fabrication, materials sampling



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Design-Build tips:

- Pick the right project.
- Pick the right team.
- Prepare the RFP carefully.
- Allow for contingencies.
- Plan and manage reviews.
- One FDOT PM.
- Communicate.
- Document.

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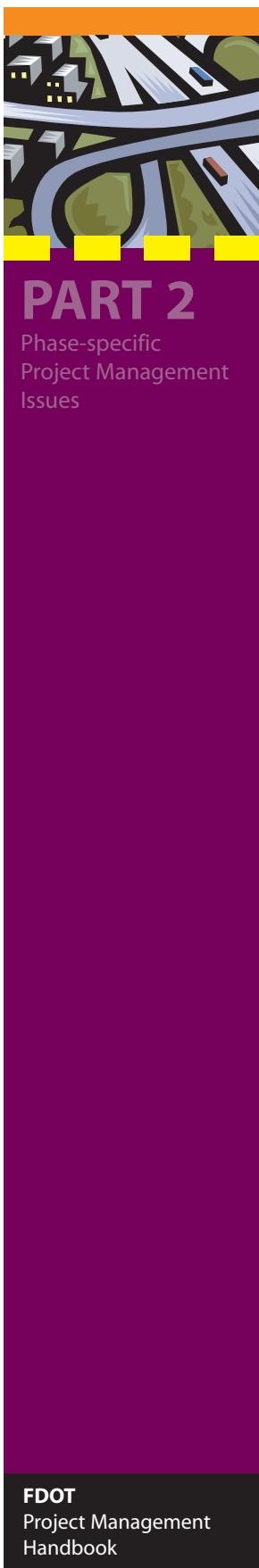
and testing, as-built drawings, surveying and mapping and other services as necessary for the particular project. The requirements for this contract would include the type and frequency of reports, submittal of shop drawings, the level and type of documentation for materials, the collection and furnishing of information needed for final certification and other requirements as necessary for the project.

Design-Build Lessons Learned

Projects that require the coordination, cooperation and approval of agencies or people beyond the control of FDOT are more likely to experience delay and may be, therefore, inappropriate for DB. Examples are projects that involve right of way acquisition or complicated environmental issues. Districts must evaluate the risks associated with such variables when evaluating the possibility of using DB procedures for a project. The potential benefits of DB must be weighed against risk, which increases as the number and severity of such unknown factors increase.

Reviews of some recent DB projects indicate that an emphasis on the following issues may help ensure a successful DB project:

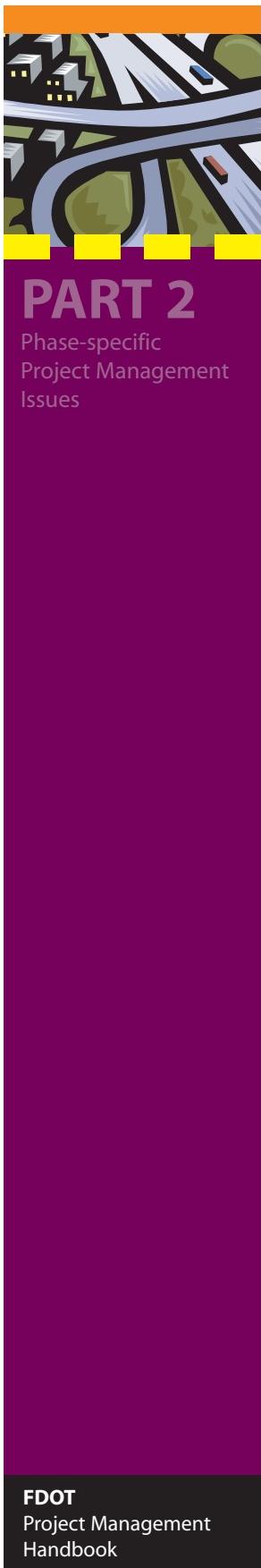
- Pick the right project for DB. Projects must be well defined, have little or no right of way required and few, if any outstanding environmental or permitability issues.
- Pick the right team. The selection process must be carefully structured to select the best-qualified team.
- Prepare a clear and concise request for proposal. The scope must cover all desired work requirements.
- Allow for contingencies to cover unforeseen conditions. Although a DB project should not have overruns, there will be unforeseen conditions and additional work requirements that may arise. The project funding should include a contingency to cover these issues.
- Submit adequate component plan sets. Component plan sets such as roadway, structures, signing and marking, maintenance of traffic (MOT), and so forth, should be submitted for segments that can be logically reviewed and built.
- Allow adequate time for plan reviews. Plan reviews cannot be as thorough as for conventional designs because reviewers will probably not receive the full design in one submittal. Since the contractor has much more responsibility for the final product for a DB project, thorough plan reviews by FDOT are not as necessary. However, FDOT plan reviews are important and reviewers must be provided adequate time for their reviews.
- Process all information and decisions through the FDOT Project Manager. Design-build projects are fast paced and involve many concurrent activities. The FDOT PM must know about all these activities to ensure proper coordination.
- Recognize that communication is key. Frequent project meetings with the FDOT PM, the contractor, designer, CEI and other interested parties are necessary.
- Document all actions and decisions. Because of the fast pace and concurrent activities, thorough documentation is essential throughout the project.



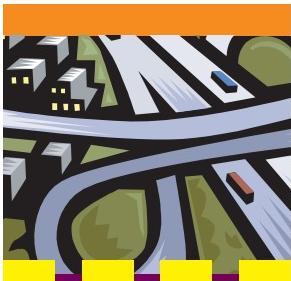
Internet References

Internet references cited in the chapter are linked directly in the text or can be found below.

- Procedure No. 625-020-010, [Design-Build Procurement and Administration](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *600 Series*
 6. *Procedure No. 625-020-010*
- [Design-Build Guidelines](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Construction Office*
 4. *Specialized Area*
 5. *Design Build*
 6. *Design Build Procedures and Guidelines*
 7. *Guidelines*
- [Design-Build](#) website
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Construction Office*
 4. *Specialized Area*
 5. *Design Build*
- [Chapter 14](#), Procedure No. 575-000-000, Right of Way Manual
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *500 Series*
 6. *Procedure No. 575-000-000*



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FDOT maintenance is mostly contract-driven.

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CHAPTER 21

Maintenance Project Management

The Florida Department of Transportation (FDOT) must maintain over 12,000 centerline highway miles of roadway; 6,300 bridges; and 67 rest areas, welcome centers, service plazas and other roadside facilities in order to provide efficient and safe transportation and to preserve its substantial investment. The maintenance program consists of a mixture of in-house and contract work, with the trend favoring more contract maintenance in future years.

The Florida DOT Maintenance Program

Maintenance programs are projected in the FDOT Five-Year Work Program. An automated Maintenance Management System (MMS) is used to assist in planning, organizing, budgeting and controlling the overall maintenance operations for the Department. The overall Maintenance Contract Program consists of some large projects and numerous small projects, some of which are repetitive in nature. Whether large or small, all projects require skilled project managers to make the program successful. A Project Manager in maintenance must have management and leadership skills and be able to handle contract administration, reporting responsibilities and enforcement of contract provisions.

Project Manager Titles

Project Managers generally have the overall responsibility for producing a quality product within time and budget. Maintenance Project Managers, too, have these responsibilities. A Maintenance Project Manager could have any of the following titles:

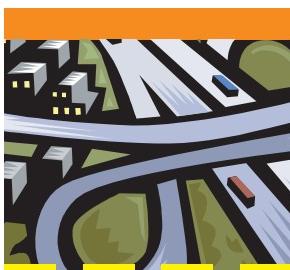
- Maintenance Contract Engineer
- Assistant Maintenance Engineer
- Maintenance Engineer
- Maintenance Contract Administrator
- Operations Center Engineer
- Operations Center Manager
- Operations Center Contract Engineer
- Operations Center Contract Manager

Contract Maintenance

The FDOT maintenance program is mostly contract-driven. Examples of contracts administered by Maintenance Project Managers are:

- Asset Management Contracts (for a corridor, geographic area or specific component)
- District Contracts (annual, work-order driven or site specific)
- Contractual Services (service contracts)
- Professional Services Contracts (bridge inspection)

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The maintenance PM
is a contract
manager.

- Emergency Contracts
- Temporary Contracts

Most of these contracts are procured and managed in accordance with **Procedure No. 375-000-001**, [District Contracts](#). Asset management contracting instructions can be found on the [Maintenance Office](#) website. **Chapters 10, 11 and 12** of this handbook discuss contracts for consultant services.

In addition, maintenance frequently enters into agreements with other state agencies, local governments and other organizations. These agreements include the following:

- Memorandum of Agreements (MOAs)
- Joint Participation Agreements (JPAs) (see Appendix C)
- Negotiated Agreements with groups certified as a Florida Youth Work Experience Program
- Department of Correction Inmate Programs

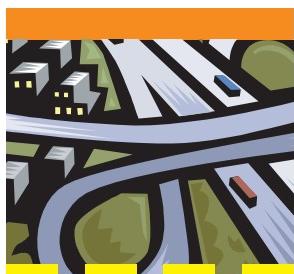
The Maintenance Project Manager must be fully knowledgeable of contract document preparation, procurement of services, negotiations, and administration of various types of contracts. He/She must have a full understanding of the specifications or scope of services to be rendered under the contract and how the contractor will be paid. **Procedure No. 375-020-002**, [Contract Maintenance Inspection and Reporting](#), contains specific instructions related to the management of maintenance contracts.

Maintenance Project Managers may be called upon to fully develop bid packages for any of the contract types listed above. Such activities will include a complete review of the work requirements to determine the optimum contracting method. Once the contracting method has been determined, a complete set of contract documents is developed. The following are some of the required documents:

- Plans for the Work
- Scope of Services
- Maintenance Special Provisions
- Standard Maintenance Specifications
- Special Provisions
- Supplemental Specifications
- Standard Specifications
- Design Standards
- Cost Estimates
- Quantities and Pay Items
- Fund Encumbrances

Information concerning the development of specifications and special provisions can be found in **Procedure No. 850-000-020**, [Standard Maintenance Special Provisions](#), and **Procedure No. 850-000-025**, [Maintenance Specification Package](#).

The contract package is then submitted to the appropriate FDOT Contracts Administration personnel for advertising, bidding, review and award. The Maintenance Project Manager must work closely with the contracts personnel; she/he will be expected



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Asset Management is performed with long-term lump sum contracts.

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to review bids or proposals and provide inputs to the awards committee when required. Once the contract is awarded, the Maintenance Project Manager must then implement the project start-up and controls as required by the contract documents.

Maintenance Rating Program

The Maintenance Rating Program (MRP) is a uniform method for evaluating the performance of maintenance operations. The Maintenance Rating Program, described in **Procedure 850-065-002, Maintenance Rating Program**, provides the Project Manager with a uniform procedure to evaluate maintenance features on the State Highway System. The information contained in this procedure together with that in the **Maintenance Rating Program Handbook** defines a method for conducting a visual and mechanical evaluation of routine highway maintenance conditions.

Maintenance ratings can be a valuable resource early in the development of new construction projects to help ensure that maintenance needs are adequately considered in the project scope. It is also a good practice to perform maintenance ratings on new projects as they near construction completion to help identify problems that might be corrected during construction.

Asset Management

Asset management contracts are generally used for routine maintenance work and management services for a designated corridor, geographic locale, or specific roadway components such as rest areas, weigh stations, welcome centers, bridges or other fixed assets within a specified boundary. The contracts are usually long term, fixed lump sum contracts. Under this type of contract, the contractor assumes all risks associated with the specific scope of work and posts an annual performance bond. The contractor's performance is rated periodically using the FDOT Maintenance Rating Program, and other performance measures that have pre-determined deducts in payment for sub-standard or unacceptable performance. The [Maintenance Office](#) website contains useful information related to asset maintenance.



Source: FDOT

Because of the size and complexity of these contracts, they are generally awarded through a Request for Proposal process. Proposals are first evaluated and scored against the scope requirements. The proposals include the contractor's plan to comply with the FDOT maintenance requirements as presented in the scope of services. Final contractor selection is made with price 30% and the technical portion of the proposal 70% of the total score.

These contracts must be monitored to assure the contractor's proper performance of all requirements in the scope of services. Reductions in payments are assessed if the maintenance contractor's performance is substandard. The desired level of maintenance is included in the scope of services, and the MRP is part of the evaluation process.



PART 2

Phase-specific
Project Management
Issues



Maintenance professionals must be involved in the early phases of a project.

Other Maintenance Contracts

The FDOT maintenance projects that are not under an asset management type contract are generally performed by other maintenance contracts. Some contract maintenance is specialty work; other contracts may cover routine maintenance. The contract portion of maintenance may cover the following areas:

- Pavement Marking and Striping
- Asphalt Repair
- Roadway Lighting Maintenance
- Mechanical Roadway Sweeping
- Concrete Repairs and Joint Sealing
- Roadside, Intermediate and Slope Mowing
- Maintenance of Traffic
- Guardrail, Attenuator and Fence Repair
- Maintenance of Signs and Delineators
- Litter Removal
- Tree Trimming and Removal
- Drainage Repairs
- Shoulder, Slope and Ditch Repair

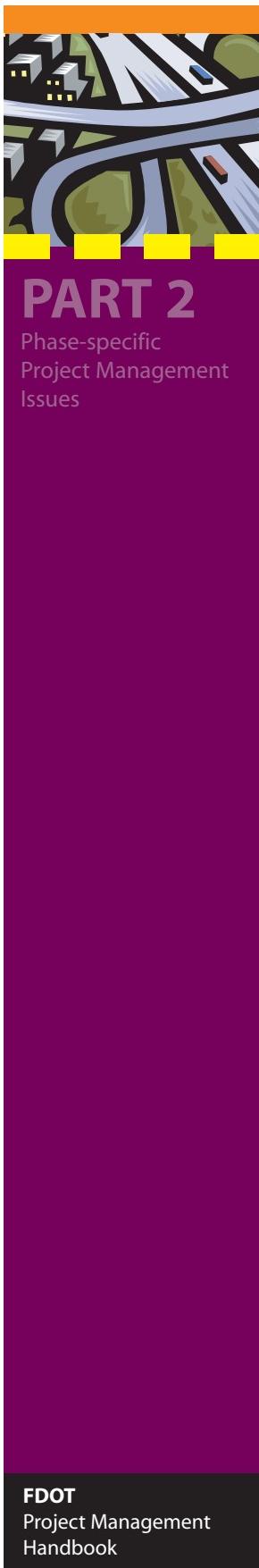


Source: Florida State Archives

The above list is by no means a complete list, but it serves as an example of the areas of roadway maintenance that can be contracted. Controlling these many separate contracts requires a Project Manager skilled in contract inspection and administration. Contractors who demonstrate an inability or lack of willingness to comply with the terms of the contracts should be declared non-responsible, as described in [**Procedure 850-070-001, Contractor Non-Responsibility for Maintenance Contracts.**](#)

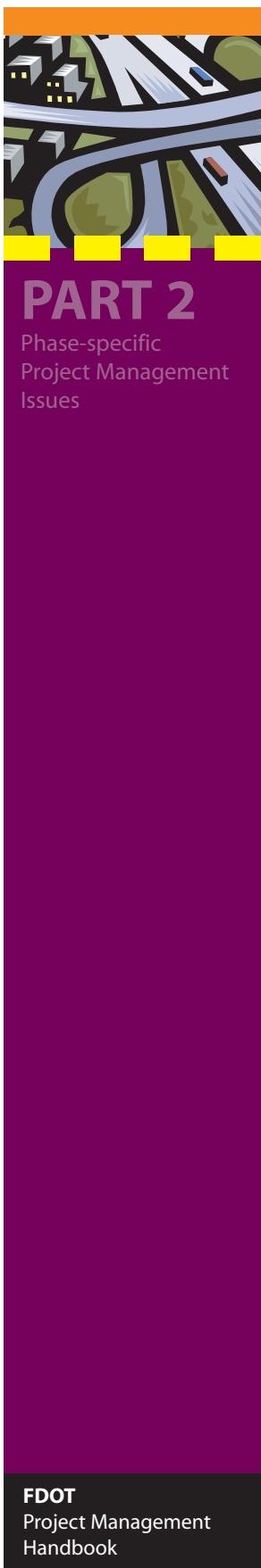
Coordinating Developing Projects

It is the district Maintenance Office that will "own" the ultimate result of projects that work their way through the planning, project development, design, right of way and construction pipeline. All Project Managers in this pipeline should consult with and seek the input of the responsible maintenance professional. Avoidable maintenance problems are frequently "built in" to a project. Project Managers in the pipeline should actively seek and consider suggestions from maintenance and maintenance professionals should take advantage of opportunities to improve the quality of the final product. The design should facilitate easy maintenance of all features of the project, such as shoulders, slopes, drainage features, and signs. The designer should take into account space needed for maintenance activities without creating traffic problems. The maintainability of new products and equipment should always be considered before including them in the plans and specifications.



Because funding is always a challenge for maintenance operations, maintenance reviewers should seek to have all appropriate work included in the construction contract. It makes sense to include the correction of any maintenance problems in a construction contract. However, construction contracts are not usually used to perform routine maintenance that is the responsibility of the local maintenance office, such as ditch cleaning or tree trimming. Maintenance Project Managers must understand that there are funding limits on construction, and it is not always possible to get everything "fixed" with the construction project. These discussions should take place at the time of project scoping, very early in the project development process. The construction Project Manager has very limited ability to change the scope of work during active construction. The emphasis for coordination during construction should be on quality and maintainability of the work.

CHAPTER 21- Maintenance Project Management



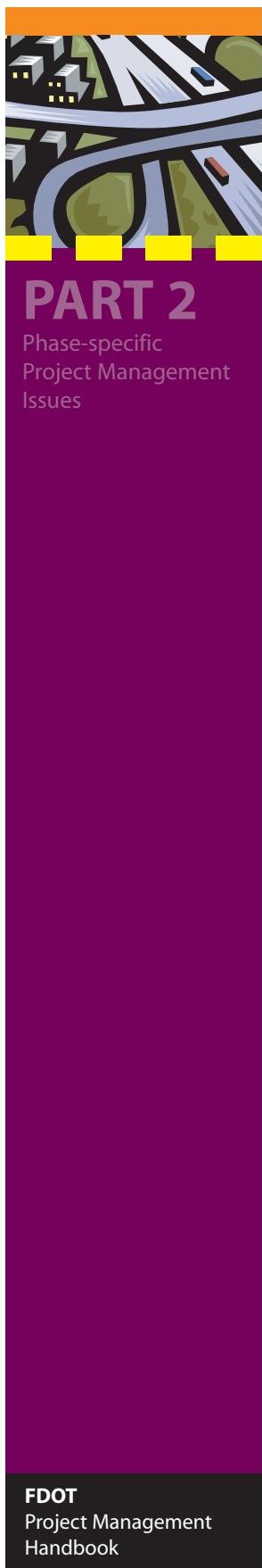
Internet References

Internet references cited in the chapter are linked directly in the text or can be found below.

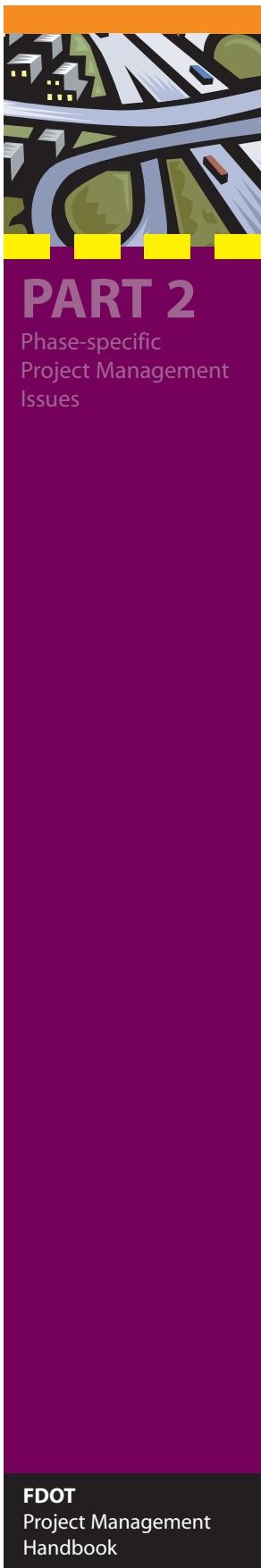
- Maintenance-related procedures
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*

- | | |
|------------------------------|---|
| Procedure Number 225-085-001 | General Liability Claims |
| Procedure Number 375-000-001 | District Contracts |
| Procedure Number 375-020-002 | Contract Maintenance Inspection and Reporting |
| Procedure Number 375-030-015 | Documentation and Analysis of Maintenance Contract Claims |
| Procedure Number 625-010-021 | Median Opening and Access Management Decision Process |
| Procedure Number 850-000-001 | Transportation Data Collection, Storage and Reporting |
| Procedure Number 850-000-005 | Maintenance Responsibilities on Construction Projects |
| Procedure Number 850-000-015 | Roadway and Roadside Maintenance |
| Procedure Number 850-000-020 | Standard Maintenance Special Provision Development |
| Procedure Number 850-000-025 | Maintenance Specification Package |
| Procedure Number 850-005-001 | Reporting Incidents and Management of Damage Repair |
| Procedure Number 850-050-003 | Guardrail Inspection and Maintenance |
| Procedure Number 850-050-004 | Highway Safety Memorial Markers |
| Procedure Number 850-010-010 | Bridge Inventory Database |
| Procedure Number 850-010-011 | Bridge Underwater Operations Manual |
| Procedure Number 850-010-030 | Bridge and Other Structures Inspection and Reporting |
| Procedure Number 850-010-031 | Bridge Operations and Maintenance Manual |
| Procedure Number 850-010-035 | Bridge Load Rating, Permitting and Posting Manual |
| Procedure Number 850-045-002 | Rest Area Customer Comments |
| Procedure Number 850-055-003 | Reporting Attenuator Inventory and Inspection |
| Procedure Number 850-055-025 | Single and Multi-Post Sign Inspection |
| Procedure Number 850-055-035 | Motorist Aid System Testing and Routine Maintenance |
| Procedure Number 850-065-002 | Maintenance Rating Program |
| Procedure Number 850-070-001 | Contractor Non-Responsibility for Maintenance Projects |

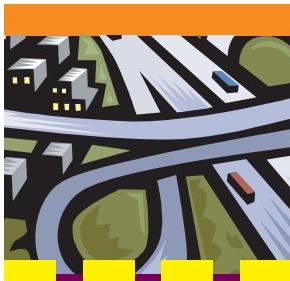
CHAPTER 21- Maintenance Project Management



- [Standard Maintenance Special Provisions](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Maintenance Office*
 4. *Standard Maintenance Special Provisions*
- [Asset Management](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with the DOT*
 3. *Maintenance Office*
 4. *Asset Maintenance*



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PART 2

Phase-specific Project Management Issues



LAP allows local agencies to award and manage their own projects.

FDOT
Project Management Handbook

CHAPTER 22

Local Agency Program Project Management

The Florida Department of Transportation (FDOT) has a program to contract with qualified local agencies for the administration of certain federally funded projects. This program is known as the Local Agency Program (LAP). The local agency should appoint a Project Manager (PM) for each LAP project. The LAP PM should review the appropriate

chapters from this handbook for guidance on how to manage an FDOT project. The chart in the Introduction of this handbook should be used to determine which chapters can provide the most assistance for a specific project.

It is unlikely that the local agency Project Manager will be thoroughly familiar with FDOT procedures. During each phase of a project the local agency Project Manager should work with the FDOT District LAP Administrator and her/his FDOT technical counterparts in various offices to ensure that correct procedures are being fol-

lowed. Effective communication is essential. The LAP Project Manager should take the initiative in facilitating communication, if necessary. LAP PMs should become familiar with this handbook and take advantage of FDOT training opportunities.

The Local Agency Program Process

The Florida Department of Transportation has historically contracted with local governmental agencies to plan, develop, design, acquire right of way and construct transportation facilities. With the passage of the Intermodal Surface Transportation Efficiency Act of 1991, FDOT was charged with expanding this program. LAP is used for federally funded projects including PD&E, design and construction. LAP can also be used for projects for which federal funds are anticipated. When the Department contracts with another agency for reimbursement of federal funds to that agency, the Department is still held responsible for compliance with all federal statutes, rules and regulations.

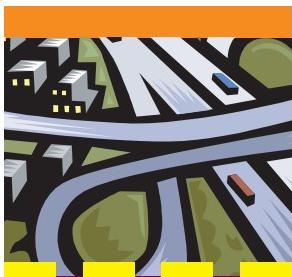
This process is described in detail in [**Procedure No. 525-010-300, Local Agency Program Manual**](#). It is important that LAP Project Managers become familiar with this manual, which contains all administrative requirements of the program. The [Local Agency Program](#) website contains additional information concerning this program.

The Central Office LAP Administrator is responsible for the administration and oversight of the program. Each district has a LAP Administrator, who is responsible for project-level direction and oversight through the offices of planning, environmental management, design, right of way and construction.

Under LAP, FDOT can delegate some authority for project development and construction administration of federally funded projects to qualified local agencies. The program does not eliminate any project development procedures. The local agency, however, saves time and money because it has authority to advertise, award and manage its own projects. LAP also gives local agencies more control over design and implementation.



Source: FDOT



PART 2

Phase-specific
Project Management
Issues



All FDOT project development procedures are required of LAP projects.

FDOT
Project Management
Handbook

Although the process for administering federally funded projects may be streamlined under LAP, local agencies need to understand other conditions. The LAP process requires that the local agency maintain sufficient staff and other resources for project administration to ensure all applicable state and federal requirements are met. Once a local agency is certified, the Certification Qualification Agreement between the local agency and FDOT remains in effect indefinitely unless rescinded or modified by one of the two parties. A certified local agency may develop any phase of a federally funded project for which it qualifies using the procedures permitted under LAP.

The following project activities may be included in a LAP certification:

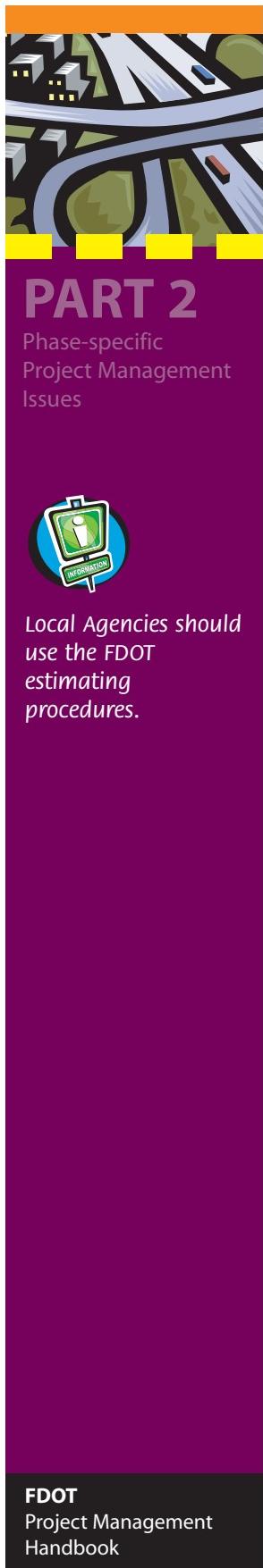
- Location and design
- Utility agreements
- Railroad agreements
- Standard consultant engineering agreements
- Environmental documentation
- Bid reviews
- Advertisement and award of construction projects
- Construction administration (including design-build)
- Construction material testing
- Force account (work performed by the local agency's employees)

The Federal Highway Administration (FHWA) and FDOT retain responsibility for the following actions:

- Planning requirements
- Authorization of funds
- Determination of environmental class of action
- Right of way certification
- Approval of plans, specifications and estimates
- Final inspection
- Equal Employment Opportunity Program
- Disadvantaged Business Enterprise Program

Once a local agency is certified to administer federally funded projects, it may want to apply for federal funds to develop specific projects for its transportation program. Right of Way (R/W) activities are not included in the certification process. A LAP agreement between the local agency and the FDOT is prepared for each federally funded project that covers all phases of work involved in the project. Its purpose is to ensure that the federal funds in the agreed-upon amount are spent in accordance with all applicable state and federal laws and regulations. This agreement also specifies the procedures for payment and reimbursement on the project. The local agency should fund the project to the full participation ratio. The LAP Agreement does not constitute approval of federal funds.

Federal regulations do not allow FDOT to delegate the certification of right of way. Local agencies must be qualified on a project-by-project basis by FDOT to acquire right of way. The local agency must obtain authorization from FDOT to proceed with right of way activ-



PART 2
Phase-specific
Project Management
Issues

 Local Agencies should use the FDOT estimating procedures.

FDOT
Project Management
Handbook

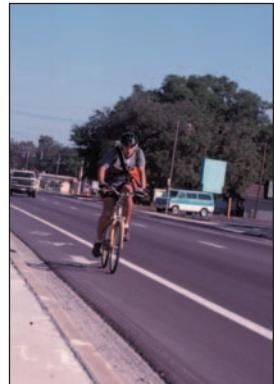
ties after qualification and prior to beginning any right of way activities on the project. Any funds expended or costs incurred prior to authorization will not be reimbursed.

Range of Possible LAP Projects

LAP can include a wide range of projects, from very simple enhancement projects to complex projects for developing and building major transportation facilities. Federal funds may be authorized for the following project phases:

- Planning
- PD&E Studies
- Preliminary Engineering
- Right of Way
- Construction
- Construction Engineering and Inspection (CEI)

The local agency must be certified by the District LAP Administrator in each of the project phases it desires to perform on a LAP project. In order to be LAP certified for a particular project phase, the agency must have in-house professional staff who have completed appropriate FDOT training in that phase or have consultants under contract who are qualified in that phase of work. If it desires, a local agency may become LAP certified for a specific project only.



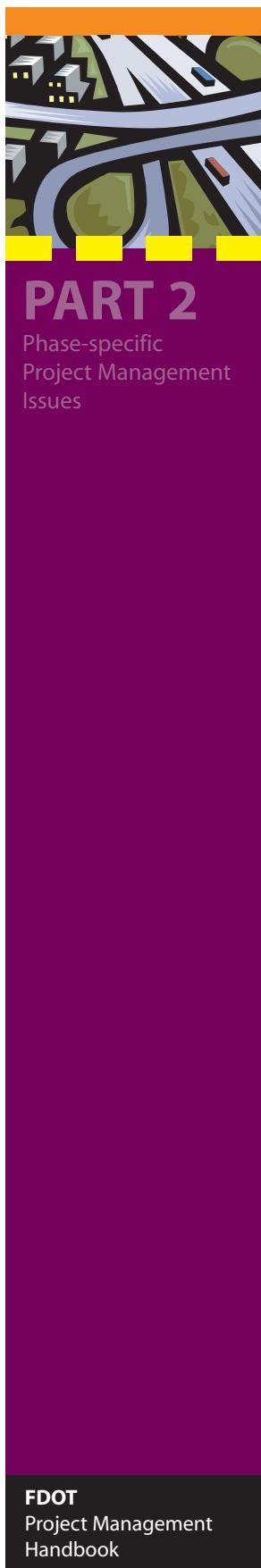
Source: FDOT

Each phase must be specifically authorized. If, for example, a local agency is going to do both design and construction with its own forces, there must be a separate authorization for each phase of work. The benefits and costs of using federal funds in each phase of project development should be considered carefully when developing project schedules. The use of federal funds may require additional work or activities in prior work phases or require certain commitments or compliance in subsequent work phases.

Programming and Estimating LAP Projects

A local agency should submit the Federal-Aid Funding Request to the local metropolitan planning organization (MPO) or county commission in the absence of an MPO. This process should start early in the state's fiscal year (July 1 to June 30) to assure state and federal funds are committed in the years for which the project is programmed. Local agencies should work closely with the MPO or county commission during this process. Once projects are identified by the transportation planning process they are entered into the work program like any other FDOT project. After the project is programmed in the Department's Five-Year Work Program, the local agency should work through the district LAP Administrator and not deal directly with the Federal Highway Administration.

It is recommended that local agencies use the FDOT cost estimating procedures when appropriate rather than local procedures. Since LAP projects should be constructed using FDOT specifications, many preliminary estimates based on local cost experience have proved to be inadequate.



Design Standards

The design standards applicable for LAP projects are found in Chapter 4, Section 1, of the LAP Manual, which includes the process that must be followed if there is a deviation from the design criteria.

Progress Billings

Chapter 2, Section 3, of the LAP Manual explains the progress billing procedure. It is not appropriate to wait until the end of a large project to submit an invoice. Billings should be submitted on a routine basis, such as monthly or quarterly. It is also important to close out a project with the prompt submittal of the final invoice. To ensure proper project close-out, the local agency should work with the district LAP Administrator throughout this process.

Internet References

Internet references cited in this chapter are linked directly in the text or can be found below.

- Procedure No. 525-010-300, [Local Agency Program Manual](#)
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Policies, Procedures, Forms and Manuals*
 4. *Procedures by Number*
 5. *500 Series*
 6. *Procedure No. 525-010-300*
- [Local Agency Program](#) website
 1. <http://www.dot.state.fl.us/>
 2. *Doing Business with FDOT*
 3. *Project Management, Research and Development Office*
 4. *Programs--Local Agency Program*



Appendix A. Public Records

The following are some frequently asked questions about Florida's public records laws, and answers to them:

What are public records, and where do I find applicable law?

Florida's Public Records Law can be found in Chapter 119, Florida Statutes (F.S.). Florida Statutes can be accessed online at www.flsenate.gov. The State of Florida places high priority on the public's right to access governmental records. This and related statutes governing access are among the most open in the nation. The Florida Department of Transportation (FDOT), as a state agency, must carefully and conscientiously implement all public records access laws and adhere to the state's open access policy.

The statutory definition of a public record is: "all documents, papers, letters, maps, books, tapes, photographs, films, sound recordings, data processing software, or other material, regardless of the physical form, characteristics, or means of transmission, made or received pursuant to law or ordinance or in connection with the transaction of official business by any agency." (Section 119.011, F.S.).

FDOT employees and anyone working under contract to FDOT can reasonably assume that most documents created, produced, or received (whether in physical or electronic format) in the course of transacting FDOT business are public records.

Are any records exempt from public records requests?

Yes, but the only documents **not** public records are those covered by a statutory exemption. While exemptions are somewhat scattered throughout Florida Statutes, most statutory exemptions can be found in Subsection 119.07(3), F.S. The following records are exempt from this procedure:

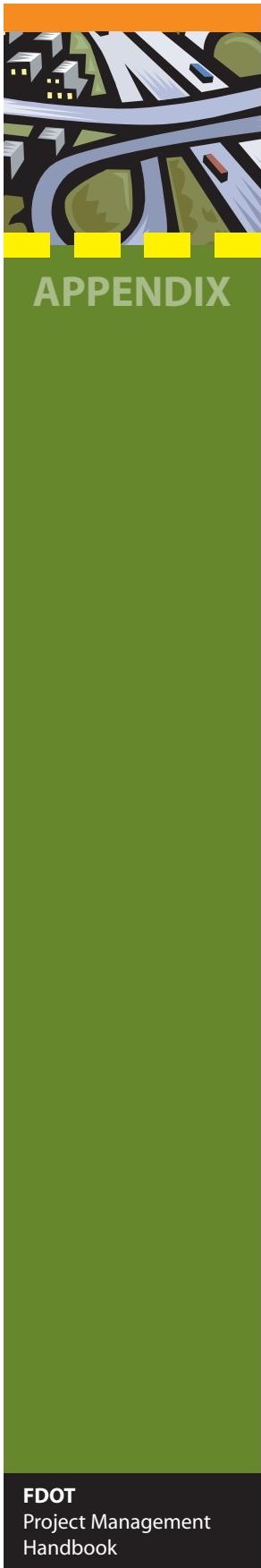
- Financial statements from contractors received in response to invitations to bid or requests for proposals
- Social Security Numbers
- Personal information of Motor Carrier Compliance law enforcement officers
- Information about family members of specified officials
- Information concerning ongoing legal proceedings may be exempt. The district counsel should be consulted before fulfilling such requests.

Procedure No. 050-020-026, Procedure No. 050-020-026, Distribution of Exempt Public Documents Concerning Department Structures and Security Systems Plans, also exempts records related to structural plans of Florida's infrastructure from requests for public records. The procedure recognizes that many non-FDOT employees such as consultants, local governments and utilities need access to these records. Records custodians must use discretion in these cases and maintain a record of all individuals who received copies of such information.

Who can request public records and how are requests made?

All non-exempt public records are subject to public inspection and/or copying or reproducing by any person, corporation or other legal entity. Section 4 of **Procedure No. 050-020-025, Records Management and Distribution,** explains how such requests are to be handled. To facilitate procedures for public records access, FDOT Central Office, districts and

Appendix A. Public Records



the Turnpike Enterprise assign a staff member as the "custodian of records." That person is usually the Office Manager or his/her designee. Inspecting and duplicating of records procedures will necessarily vary by office to accommodate number, type and frequency of records requests and the media format required for reproduction. "Every person who has custody of a public record shall permit the record to be inspected and examined by any person desiring to do so at any reasonable time under reasonable conditions and under supervision by the custodian or designee." (See Section 119.07, F.S., and Rule 14-0081, Florida Administrative Code). The custodian of records or her/his designee is responsible for safeguarding and retaining records. All offices have general counsel staff personnel available for advice and direction when legal (or procedural) questions arise concerning records access.

Requests for public records may be oral or in writing, and a custodian of records or designee must provide the response. FDOT employees or persons working under contract for FDOT may, in the course of doing business, ask or be asked for access to records. Such requests can be processed through administrative channels so that they reach the appropriate custodian of records. If an oral request for records is made, the following information should be noted (in writing) by the person receiving the request: date, time, and the specific document/s or information requested. Written requests are preferred because they may be more easily tracked and documented. All records requests must be kept on file for one year. Public records requests must be responded to in a "reasonable time." A "reasonable time" is not specifically defined and may depend on the size of the request and other factors.

The following examples illustrate a reasonable vs. unreasonable request. A request for e-mails to and from a particular person between January and June, 2004 might be a reasonable request; a request for all e-mails of all Department employees for a period of three years might be unreasonable. If the requestor wants these e-mails within an hour, that could be an unreasonable request. Or if he/she wants to take the records elsewhere for copying, that too would be an unreasonable request. The custodian of records does not decide such issues; the appropriate general counsel does.

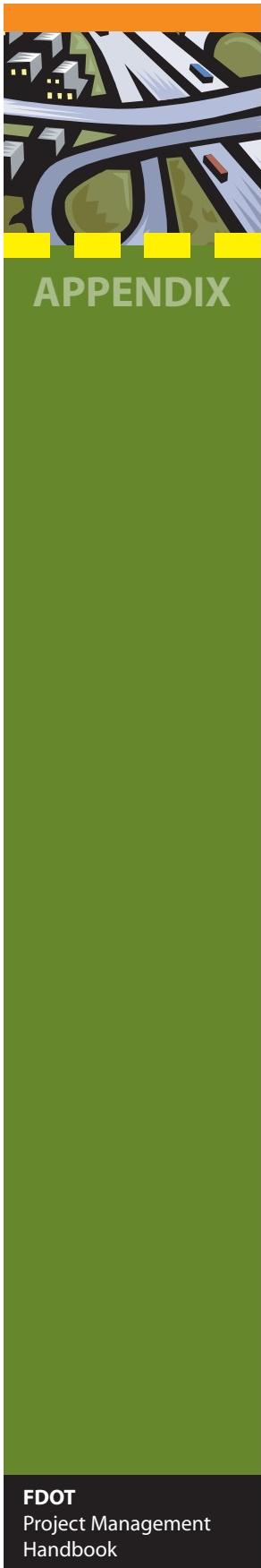
Is there a charge for public records?

The person (custodian) who responds to a public records request for hard-copy text records will furnish a copy or certified copy of the record/s upon payment of the fee prescribed by law. When no fee is prescribed, charges are 15 cents per one-sided page, size up to 8½ x 14 inches and 20 cents per page for 2-sided copies. The per-page charge for certification is \$1. When volume or the nature of the request will require more than one hour to complete, time spent after the first hour will be charged at the hourly rate of the person doing the work. Payment is required in advance of producing copies. These charges are established by Subsection 119.07(1)(a), F.S., and Rule 14-1.0081, Florida Administrative Code (F.A.C.). Additional charges may be determined and charged for oversized documents, for requests that require use of technological resources, or for those requiring extensive clerical and supervisory assistance. The requestor need not copy documents; they may be reviewed at the responsible office. If any documents are selected for copying, the above charges apply.

What steps should a Custodian of Records take in responding to a public records request?

Because they will vary from office to office, the records custodian or designee responsible for responding to public records requests must be thoroughly familiar with the office and record management procedures where he/she is working. For example, one district

Appendix A. Public Records



requires that all public records requests be handled by and processed through the district general counsel's office. This is not, however, the procedure in every district. The person responding to a public records request must know the proper internal procedures for the handling of public records requests in his/her district and follow them exactly.

Although the custodian of records or designee may not be required by district procedures to do so, it may be both necessary and prudent to consult with the district general counsel's office to confirm the proper handling of a public records request and to discuss whether or not any statutory exemptions apply to the documents or items requested. All public records must be thoroughly reviewed to ensure that all documents and information that is exempt or confidential is not produced. It is also recommended that the General Counsel's Office in Tallahassee be contacted to determine if there is ongoing litigation involving or related to the requestor. It is particularly important to know of contractor litigation. It is often a tactic of trial attorneys to obtain documents through a public records request without advising opposing counsel. If documents are sent in response to a public records request that are related to a matter in litigation, the Department's attorneys will be disadvantaged if they do not also receive copies of the documents produced.

E-mails are public records, and particular care should be taken when fulfilling public records requests for them. As with other public records, e-mails may contain documents and information that is exempt or confidential. Frequently Department attorneys communicate with employees through e-mail, and care should be taken to ensure that exempt or confidential information is not produced. Any such questionable e-mails (and other documents) should be discussed with the appropriate general counsel's office.

Does the public records law apply to contractors?

YES. Companies and individuals under contract to do work for the Department must comply with public records requests in the same manner outlined above.

What happens if there is no response to a public records request?

The Department and the person receiving the public records request are subject to sanctions for failing to comply with Florida's public records law. Misdemeanor fines are imposed upon persons who violate the public records law; a felony can be charged against persons who willfully and knowingly violate the public records law; and the Department is subject to paying attorney's fees and costs incurred in efforts to obtain public records. When in doubt, always check with the appropriate district or other general counsel's office.

Appendix A. Public Records





Appendix B. Acronyms

| | |
|--------|--|
| AADT | Average Annual Daily Traffic |
| AASHTO | American Association of State Highway and Transportation Officials |
| ACM | Asbestos Containing Materials |
| ACOE | Army Corps of Engineers |
| ADA | Americans with Disabilities Act |
| ADE | Area Design Engineer |
| AICP | American Institute of Certified Planners |
| AN | Advance Notification |
| ASCE | American Society of Civil Engineers |
| ASDB | Adjusted Score Design-Build Bid |
| ASTM | American Society of Testing and Materials |
| BATNA | Best Alternative to a Negotiated Agreement |
| BDR | Bridge Development Report |
| CAC | Citizens Advisory Committee |
| CADD | Computer Aided Design and Drafting |
| CAP | Community Awareness Plan |
| CAP | Consultant Acquisition Plan |
| CCNA | Consultants' Competitive Negotiations Act |
| CDR | Conformity Determination Report |
| CE | Categorical Exclusion |
| CEI | Construction Engineering and Inspection |
| CEQ | Council on Environmental Quality |
| CES | Contracts Estimates System |
| CFR | Code of Federal Regulations |
| CIA | Community Impact Assessment |
| CITS | Consultant Invoice Transmittal System |
| CMS | Congestion Management System |
| CO | Central Office |
| CPAM | Construction Project Administration Manual |
| CPFF | Cost Plus Fixed Fee |
| CPM | Critical Path Method |
| CPM | Construction Project Manager |
| CQC | Contractor Quality Control |
| CSM | Congestion Management System |
| CSD | Context Sensitive Design |
| CSS | Context Sensitive Solutions |
| CTQP | Construction Training/Qualification Program |

Appendix B. Acronyms



| | |
|------|---|
| CTST | Community Traffic Safety Team |
| CUTR | Center for Urban Transportation Research |
| D-B | Design-Build |
| DBE | Disadvantaged Business Enterprise |
| DCA | Department of Community Affairs |
| DEIS | Draft Environmental Impact Statement |
| DCA | Department of Community Affairs |
| DEMO | District Environmental Management Office |
| DEP | Department of Environmental Protection |
| DHV | Design Hourly Volume |
| DOT | Department of Transportation |
| DRI | Developments of Regional Impact |
| DS | Design Standards |
| D/W | District Wide |
| EA | Environmental Assessment |
| ED | Environmental Class of Action Determination |
| EIS | Environmental Impact Statement |
| EMO | Environmental Management Office |
| EOR | Engineer of Record |
| EPA | Environmental Protection Agency |
| ERP | Environmental Resource Permit |
| ESAL | Equivalent Single Axel Loads |
| ESOP | Employee Stock Ownership Plan |
| ETAT | Environmental Technical Advisory Team |
| ETDM | Efficient Transportation Decision-Making |
| FA | Federal Aid |
| FAA | Federal Aviation Administration |
| FAC | Florida Administrative Code |
| FASP | Florida Aviation System Plan |
| FCCM | Facilities Capital Cost of Money |
| FEIS | Final Environmental Impact Statement |
| FEMA | Federal Emergency Management Agency |
| FES | Florida Engineering Society |
| FDOT | Florida Department of Transportation |
| FHWA | Federal Highway Administration |
| FICE | Florida Institute of Consulting Engineers |
| FIHS | Florida Intrastate Highway System |
| FNL | Finish No Later Than |

Appendix B. Acronyms



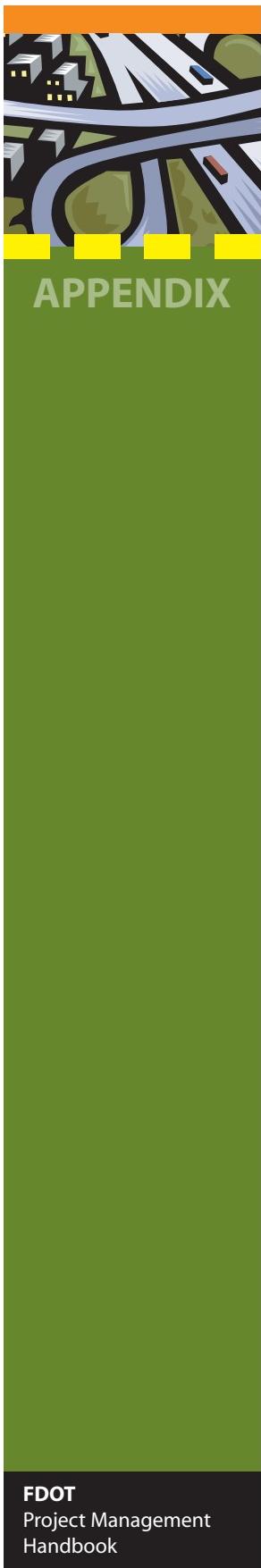
| | |
|--------|---|
| FONSI | Finding of No Significant Impact |
| FQD | Florida Quality Developments |
| FRA | Federal Railroad Administration |
| FS | Florida Statute |
| FSTED | Florida Seaport Transportation and Economic Development Council |
| FSUTMS | Florida Standard Urban Transportation Model Structure |
| FTA | Federal Transit Administration |
| FTP | Florida Transportation Plan |
| | |
| GC | General Consultant |
| GEC | General Engineer Consultant |
| GIS | Geographic Information System |
| GPS | Global Positioning System |
| | |
| HOV | High Occupancy Vehicle |
| | |
| IJR | Interchange Justification Report |
| IMR | Interchange Modification Report |
| IOAR | Interchange Operational Analysis Report |
| ISTEA | Intermodal Surface Transportation Act |
| ITS | Intelligent Transportation System |
| | |
| JPA | Joint Participation Agreement |
| | |
| LA | Limited Access |
| LAP | Local Agency Program |
| LBDB | Low Bid Design-Build Bid |
| LBR | Legislative Budget Request |
| LDCA | Location and Design Concept Acceptance |
| LGCP | Local Government Comprehensive Plan |
| LOI | Letter of Interest |
| LOR | Letter of Response |
| LOS | Level of Service |
| LRE | Long Range Estimate |
| LRT | Light Rail Transit |
| LRTP | Long Range Transportation Plan |
| LS | Lump Sum |
| | |
| MBE | Minority Business Enterprise |
| MMS | Maintenance Management System |

Appendix B. Acronyms



| | |
|-------|---|
| MOA | Memorandum of Agreement |
| MOT | Maintenance of Traffic |
| MOU | Memorandum of Understanding |
| MPO | Metropolitan Planning Organization |
| MRP | Maintenance Rating Program |
| MUTCD | Manual of Uniform Traffic Control Devices |
| NCHRP | National Cooperative Highway Research Program |
| NEPA | National Environmental Policy Act |
| NHS | National Highway System |
| NIMBY | Not in My Back Yard |
| NMSA | Non-Major State Action |
| NPDES | National Pollutant Discharge Elimination System |
| NTP | Notice to Proceed |
| O&M | Operations and Maintenance |
| OPP | Office of Policy Planning |
| PCR | Project Concept Report |
| PD&E | Project Development and Environmental |
| PE | Preliminary Engineering |
| P.E. | Professional Engineer |
| PER | Preliminary Engineering Report |
| PIO | Public Information Office |
| PM | Project Manager |
| PPM | Plans Preparation Manual |
| PS&E | Plans, Specifications and Estimate |
| PSU | Professional Services Unit |
| PTO | Public Transportation Office |
| QA | Quality Assurance |
| QAP | Quality Assurance Plan |
| QC | Quality Control |
| RCI | Roadway Characteristics Inventory |
| RFI | Request for Information |
| RFP | Request for Proposal |
| ROD | Record of Decision |
| RPC | Regional Planning Council |
| RR | Railroad |
| RRR | Resurfacing, Restoration and Rehabilitation |

Appendix B. Acronyms



| | |
|--------|--|
| RSP | Rail System Plan |
| R/W | Right of Way |
| SEIR | State Environmental Impact Report |
| SEIS | Supplemental Environmental Impact Statement |
| SHE | State Highway Engineer |
| SHS | State Highway System |
| SIS | Strategic Intermodal System |
| SNE | Start No Earlier Than |
| SOS | Scope of Services |
| SOV | Single Occupancy Vehicle |
| STIP | State Transportation Improvement Plan |
| SUE | Subsurface Utility Engineering |
| TAC | Technical Advisory Committee |
| TCP | Traffic Control Plan |
| TDLC | Transportation Design for Livable Communities |
| TEA-21 | Transportation Equity Act for the 21st Century |
| TIP | Transportation Improvement Program |
| TMA | Transportation Management Area |
| TRC | Technical Review Committee |
| TSM | Transportation System Management |
| TSP | Technical Special Provision |
| TSP | Transit Strategic Plan |
| UAM | Utility Accommodation Manual |
| UAO | Utility Agency/ Owner |
| UPWP | Unified Planning Work Program |
| USC | United States Code |
| USCG | United States Coast Guard |
| VE | Value Engineering |
| VECP | Value Engineering Change Proposal |
| WMD | Water Management District |
| WP | Work Program |
| WPI | Work Program Instructions |
| WZTC | Work Zone Traffic Control |

Appendix B. Acronyms





Appendix C. Joint Participation and Other Agreements

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SECTION 1. INTRODUCTION

Historically, the Department of Transportation has administered all State Highway System work with its own forces and its own money. Local governments have likewise administered and funded local road work within their jurisdictions. Over time, however, both the Department and local governments have recognized the need to work together and to pool resources. In recent years the Legislature has authorized such cooperation.

Various contractual arrangements are used to accomplish joint projects. They include: Joint Participation Agreements, Special Project Agreements, Utility Agreements and Public Transportation Agreements (for transit, intermodal, rail, aviation and seaport projects). In addition, the Department enters into Joint Use Agreements with private property owners. Such agreements might involve surplus and exchange of real property. It could also be a Drainage Agreement.

SECTION 2. JOINT PARTICIPATION AGREEMENT

Authorized by Section 339.12, Florida Statutes (F.S.). Procedures for the Joint Participation Agreements (JPA) are contained in ***Procedure No. 725-000-005, Public Transportation Joint Participation Agreement.*** Contact person would be the district JPA Coordinator.

The Department of Transportation may enter into a Joint Participation Agreement when the Department decides to use state funds to participate with a local government to define a project that is not revenue producing to be done on the State Highway System and to determine the Department's participation. The Joint Participation Agreement will define the scope of work, type of funds to be used and the legal provisions.

Types of Joint Participation Agreements include:

Landscaping/Beautification. The Department will provide funding to local governments for plant materials. Of such funds, 50 percent must be for large plant materials and 50

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percent for other plant materials. The plants must be purchased from Florida-based nursery stocks except as prohibited by federal law and to the extent practical. Purchase must be a uniform competitive bid. The underlying statutory authority for landscaping is Subsection 334.04(26), F.S.

The local government must agree to maintain the landscaping installed by the project in accordance with the Landscape Maintenance Plan(s). This maintenance will be in accordance with Rule 14-40.003, Florida Administrative Code (F.A.C.). It is important for the district Maintenance Engineer or designee to be consulted on all landscaping Joint Participation Agreements.

Intersection Improvements. The Department often provides state funds to local governments to construct intersection improvements on behalf of the Department if the local government's cost is less than that of the Department's and if it would be practical, expeditious and economical for the Department to provide the funds. This situation arises when both the Department and the local government have projects that are under way concurrently at an intersection.

Design; Construction; Resurfacing, Reconstructing, and Rehabilitation (RRR). The Department will provide state funds to local governments if the Department feels that the scope of work that the local government will be performing will save the Department time and will help the Department avoid cost increases on the project. Such a situation arises when the Department has included an RRR job on a section of a state road where the local government plans utility or other work that would significantly affect the surface of a state road.

Drainage Improvements. The Department will provide state funds to local governments to improve drainage structures within the right of way limits of state roads when the local government undertakes to improve its own drainage system outside the limits of the state road. The Department can realize cost savings because the local government may already have a contractor mobilized or because economies of scale associated with the larger project may result. State funds are used to reimburse the local government for work done to the Department's drainage system located within the Right of Way and at the point of connection to the local government's drainage system.

Metropolitan Planning Organization Grants. The Department will provide state funds to a metropolitan planning organization to provide Departmental assistance to develop Long Range Transportation Plans in accordance with 23 Code of Federal Regulations, Section 450.322 and to assist in transportation studies.

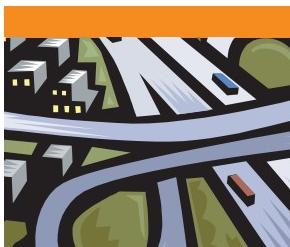
SECTION 3. LOCALLY FUNDED AGREEMENTS

Authorized by s. 339.12, F.S. Procedures for the Locally Funded Agreements are contained in FDOT Procedure Topic No. 350-020-300. Contact person would be the District JPA Coordinator.

The Department of Transportation routinely enters into an agreement which requires the deposit of local funds with the Department to use for funding a specific project. The Department may enter into a Locally Funded Agreement when the local government provides/contributes funding to participate on a project that the Department of Transportation will complete. The Locally Funded Agreement will define the scope of work, type of funds to be used and the legal provisions.

Examples of Locally Funded Agreements include:

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- **LF Funds.** FDOT lets the contract or does the work and the local government contributes; or the local government lets the contract for doing the work.
- **LFF Funds.** Local funds are used to match federal funds on projects off the State Highway System.
- **LFR.** The local government agrees to perform a highway project or project phase in the Department's adopted work program earlier than programmed in the Work Program System. Or the governmental entity agrees to advance funds to the Department to accomplish a project early, and the local government will be reimbursed in the year that the project was originally programmed in the Work Program System.
- **LFRF.** The Department enters into an agreement with a local governmental to advance a project phase not included in the Adopted Work Program. These are only for right of way, construction, construction inspection and related support phases (PE and Design are excluded).

SECTION 4. LOCAL AGENCY PROGRAM AGREEMENTS

Authorized by s. 339.12, F.S. Procedures for the Local Agency Program (LAP) Agreements are contained in the ***Procedure No. 525-010-300, Local Agency Program Manual***. Contact person would be the district Special Project Supervisor.

The Department contracts with local governmental agencies to plan, develop, design, acquire right of way, and construct transportation facilities and to reimburse local governments for services provided to the traveling public. When the Department contracts with a local government for reimbursement using federal funds administered by the Federal Highway Administration, the Department will be held accountable to ensure the certified local Government complies with all applicable federal statutes, rules and regulations. Local governmental agencies must be LAP certified before entering into a LAP Agreement.

SECTION 5. PUBLIC TRANSPORTATION AGREEMENTS

Authorized by s. 339.12, F.S. Procedures for the Joint Participation Agreements are contained in ***Procedure No. 725-000-005***. Contact person varies by type of agreement.

Public Transportation includes: Rail, Aviation, Seaport, Intermodal, and Transit projects. The Department will provide state funds for providing assistance for transportation services. List of contacts are cited below in descriptions.

Rail Agreements. Any project that includes new construction, reconstruction, widening and/or resurfacing of a road at or near the right of way of a highway railroad grade crossing or the reconstruction or new construction of a Grade Separation over railroad tracks requires that a contract be negotiated with the railroad. Section 337.11, F.S. requires all Railroad Agreements to be negotiated and signed before a highway construction project is advertised for bid. Rail procedures are also contained in ***Procedure No. 725-080-002, Rail Manual***. Contact person would be the district Rail Administrator.

Aviation Agreements. These Agreements ordinarily are not used on roadway projects, because they deal primarily with direct aviation-related improvements to air facilities. However, the potential exists for a road project to be impacted by FAA or aviation restrictions. Involvement of the Aviation Manager is critical in that case. The Department will

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provide state funds to provide financial and technical assistance to Florida's airports in the areas of development, improvement, land acquisition, airport access and economic enhancement. Contact person would be the district Aviation Supervisor.

Seaport Agreements. These agreements are similar to Aviation Agreements in that they do not deal with roadway projects. The Department will provide state funds to provide financial and technical assistance to the seaports in Florida. Involvement of the Public Transportation Manager is critical when these agreements are negotiated. Contact person would be the District Seaport Supervisor.

Intermodal Agreements. These agreements relate primarily to public transit issues and like aviation and seaport agreements. The District Public Transportation Manager needs to be consulted early in the negotiating process. Contact person would be the district Intermodal Supervisor.

Transit Agreements. These agreements take the form of a grant of state or federal funds to a local government or provider of public transit services. The district Public Transportation Manager needs to be consulted in the negotiation process should an issue arise. Contact person would be the district Transit Supervisor.

SECTION 6. SPECIAL PROJECT AGREEMENTS

There is no FDOT procedure for these types of Agreements. References for each type of Agreement can be found in the ***Work Program Instruction Manual, Section 6***. Contact person would be the district Special Project Supervisor. Special Project Agreements include a variety of agreements that are authorized on the basis of individual statutes. These agreements allow the Department to provide funding to local governments.

County Incentive Grant Program (CIGP). This program allows the Department to provide grant funding to local governments to improve a transportation facility that is located on the state highway system or that relieves traffic congestion on the state highway system. It is authorized by Section 339.2817, F.S.

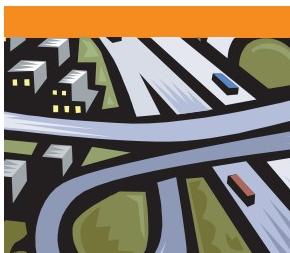
Transportation Outreach Program (TOP). This program allows the Department to provide funding for transportation projects of a high priority based on the prevailing principles of preserving existing transportation infrastructure, enhancing Florida's economic growth and competitiveness, and improving travel choices to ensure mobility. It is authorized by Section 339.137, F.S.

Small County Road Assistance Program (SCRAP). This program allows the Department to provide funding to assist small counties with resurfacing and reconstruction of county roads. It is authorized by Section 339.2816, F.S.

Small County Outreach Program (SCOP). This program allows the Department to provide funding to assist small counties in resurfacing and reconstruction of county roads or in constructing capacity or safety improvements to county roads. It is authorized by Section 339.2818, F.S.

Transportation and Community and System Preservation Program (TCSP). This program is a 100-percent federally funded grant program for direct congressional funding appropriations. Activities that are funded include planning, implementation and research of transportation, community and system preservation practices. The grant may be administered by the Florida Department of Transportation or by the Division of the Federal Highway Administration. It is authorized by Section 335.093, and Subsections 339.08(2)(j), and 339.155(2)(a) 4., F.S.

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SECTION 7. UTILITY AGREEMENTS

Authorized by Sections 337.401 and 337.403, F.S. Procedures for Utility Agreements are contained in **Procedure No. 710-010-050, Utility Relocation Agreements**. Contact person would be the District Utility Manager. The district Utility Section is responsible for arranging to clear utilities on highway construction projects, for maintaining the Department's project file, and for certifying that utilities have been cleared.

Utility Agreements authorize utility accommodations. These agreements provide for adjusting, relocating, or otherwise accommodating utility facilities on Department Right of Way. Types of Utility Agreements include:

- Reimbursable
- Non-Reimbursable
- Joint Project
- Lump Sum

SECTION 8. ROADWAY ILLUMINATION AGREEMENTS

Authorized by Section 337.11(14), F.S. There is no procedure for this type of Agreement. Reference to this type of project can be found in the **Work Program Instruction Manual, Section 6**. Contact person would be the district Traffic Engineer/Designer. The Department will provide assistance to a Utility Agency Owner (UOA) to provide a Roadway Lighting System using the UOA's poles.

SECTION 9. NATIONAL SCENIC BYWAY AGREEMENTS

Authorized by Section 335.093, F.S. There is no procedure for this type of Agreement. Reference to this type of project can be found in the **Work Program Instruction Manual, Section 6**. Contact person would be the district Scenic Highway Coordinator. The Department provides funds to local governments to develop scenic byway programs and related projects along roads designated National Scenic Byways.

SECTION 10. JOINT USE DRAINAGE AGREEMENTS

Joint Use Drainage Agreements are often used to accommodate Departmental needs relating to drainage. The joint use agreement form and context varies. Joint use situations can be addressed by way of a real property surplus or exchange agreement. On the other hand, the joint use can be accomplished through settlement prior to or as a part of an Order of Taking within the context of an Eminent Domain proceeding. In this Joint Use scenario, the real property owner whose property is adjacent to state road right of way accepts or treats stormwater drainage from the right of way for the mutual benefit of both the property owner and the Department.

In all situations involving Joint Use Drainage Agreements, the District Drainage Engineer should be directly involved in the negotiation and agreement process.

Typical situations where Joint Use is utilized include the following:

- The real property is located adjacent to or near state road right of way and is encumbered with a blanket easement or is encumbered by historic flow and drainage patterns. In order to develop the property, the land owner approaches

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the Department to accept and handle the Department's drainage so as to allow development of the property.

- The real property owner desires that the Department allow reconfiguration of or relocation of Department-owned ponds (or ponds over which the Department owns a drainage easement).
- In order to minimize the impact of a taking, the Department agrees to certain restrictions or limitations on how drainage is directed onto an adjacent property. Arrangements vary widely for these situations.

Local governments may request that the Department work with them to allow stormwater retention areas to be reconfigured or relocated to achieve goals of the local governmental agency. Or the Department may approach the local government and offer its help with such reconfigurations or relocations.

In all these situations, the office of district General Counsel should be contacted as soon as possible since there are serious and significant legal issues associated with joint use situations.